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Southern Farm and Home

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Vol. I. No. 5.

THE
SOUTHERN

FARM AND HOME



MARCH, 1870.
W. M. BROWNE, Editor.

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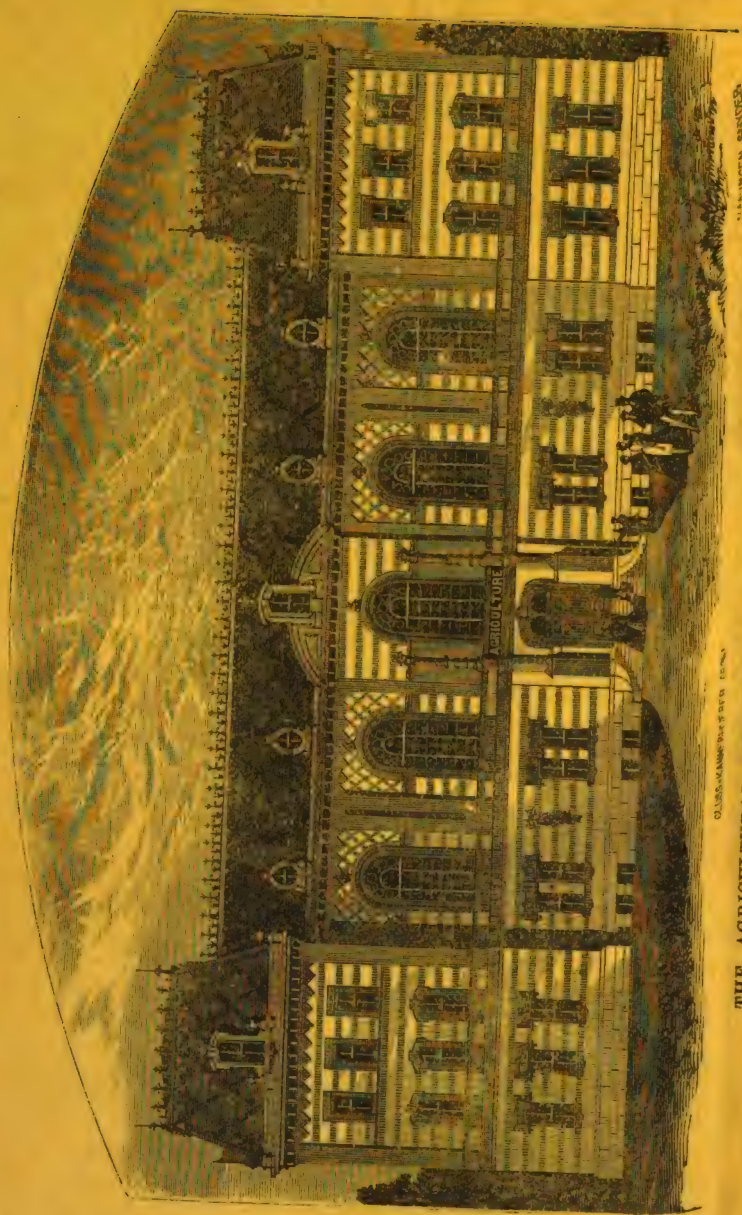


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SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., MARCH, 1870.

No. 5.



FARM WORK FOR THE MONTH.

March is essentially the "seedtime" of the Southern Farmer. During its twenty-seven working days most of the corn planting is done, and it depends in a great measure on the way that important work is performed, whether the harvest shall be abundant or scanty.

If we prepare our lands for corn by "listing," which is merely throwing three furrows together, with a stumpy scooter, scratching the surface soil to a depth of two or three inches, leaving the middle to be broken when we give the crop the first plowing, we have no right to expect any larger return than from five to eight bushels of "nubbins." We have no right to bemoan the want of "good seasons," or to attribute to drought the ruin of the crop. The fault is altogether our own. We have not prepared our land so as to guard against a drought, or even against the ordinary vicissitudes of the climate. Those who do not believe this have only to go to a field of corn planted on the "list," scrape among the surface soil and feel the stiff, impenetrable bed beneath it, hard as a brick, to satisfy themselves how utterly impossible it is to expect that the tender rootlets of the corn plant can work their way through this "hard-pan" and derive their necessary nourishment from the sub-soil.

To make a good crop of corn the ground must be thoroughly prepared,—deeply and closely plowed,—making a deep, pulverized bed through which the roots can easily penetrate in search of food; and through which the mois-

ture, heat and atmospheric gases can constantly reach the plant to give it health and strength.

We publish in another place extracts from an admirable essay on the Treatment and Cultivation of Corn, by the late James M. Chambers, which we found in an old volume of the "Soil of the South," of which valuable periodical Mr. Chambers was for many years the Editor. Though published nearly sixteen years ago, it is applicable to-day, and so far as practice is concerned, is we regret to think, as new to many of our farmers as it was the day it was written.

We would again earnestly urge all who plant, whether on a large or small scale, to remember the present price of corn, meal and meat, and without any reference to the price of cotton now, or the price at which they hope to sell the "big crop" they intend to raise this year, plant corn enough to do them, and a little to spare to help a less prudent neighbor. A well stocked smoke house and a full crib of corn are both useful and ornamental, and the man who plants all cotton and buys western corn, very rarely possesses either, but generally is in debt to his commission merchant, pays 2½ per cent interest for the advance, and frequently finds that all his cotton is insufficient to pay his debts.

PREPARATION FOR COTTON PLANTING.

During this month the land to be planted in cotton should be prepared. If the manure from the stables and stock lots has not been already hauled out and plowed under, this should be done without a moment's delay.

The best and most approved plan of bedding cotton land is to lay off the rows from three to four feet apart, according to its quality, with a long shovel plow run twice in the row, backwards and forwards, followed by a subsoil plow breaking the land from twelve to fifteen inches. In the bottom of this trench, which should be at least seven inches deep, deposit the manure;

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(RECAP)

then with a turn plow throw a furrow on each side of the shovel furrow, and let the subsoiler follow the turn plow in these two furrows, *at least*. After this is done break out the middles as deeply as possible and the beds are ready for the seed when the proper time comes to plant. If the land is inclined to be wet, the beds should be high, but where it is dry and loose, high bedding is of no advantage. For the convenience of cultivation a slight elevation is desirable.

FORAGE.

As the drought of last year has made all sorts of forage scarce, we would advise a liberal planting of drilled corn, Millet or Hungarian grass, to furnish plenty of food for the stock, and obviate the necessity of buying Northern and Western hay at \$2 per cwt., and sending the wagon to the depot two or three times to see if it has arrived.

CLOVER.

If the clover sown with small grain has not produced a good stand, there is still time, though it would have been better to have done it last month, to sow the poor spots.

SORGHUM.

This is the month to plant Sorghum for syrup. The preparation, mode of planting and cultivation is nearly the same as corn, except that the seed need not be planted so deeply and that the stalks may be not more than six inches apart in the drills which should be from three to four feet apart.

LUCERNE.

Now is the time to sow Lucerne, which if sown on well prepared rich soil is one of the most profitable crops that can be grown. Sow in drills just wide enough apart to leave sufficient room for cultivation. From 10 to 15 lbs. of seed are enough for an acre.

STOCK.

Successful planting depends largely on good stock, and good stock can only be had by good care, sufficient and regular supplies of healthy sound food, frequent use of currycomb and brush, well littered and well ventilated stables, and a close supervision by the owner that the drivers do not confound the food of the teams with their own and give themselves the benefit of the doubt, leaving the horses and mules hungry. The efficiency of plow and wagon teams also depends on proper care that the collars and back-bands fit well, and that the gear is properly adjusted.

Finally we would advise preparations to be made this month to plant for a large crop of sweet potatoes.

PRIZE ESSAY ON CORN CULTURE.

BY JOHN C. RAGSDALE, OF DEKALB.

If the land intended for corn is stubble or has a growth of weeds or grass upon it, turn them under in September. Turn just deep enough to cover the grass and weeds, and follow with a subsoil plow, the deeper the better. If the land was cultivated in corn or cotton the previous year, and has a growth of young hog weeds or any other crop of young weeds upon it, turn them under in January or February and follow with the subsoil plow as deep as it can be plowed. The land should not be turned more than three to four inches deep, or just deep enough to destroy all young weeds, or turn under any green crop or vegetable matter that is upon it. The turn plows should be used for the purpose of turning under a green crop of some vegetable matter for manure, or to destroy a crop of growing weeds or grass, and should only be run deep enough to effect these purposes, and if neither of these purposes is to be effected, the turn plow may be dispensed with and the land broken with any other plow that will most effectually break deep and pulverize well. The land being turned and subsoiled, about the first of March, or just before planting time, it should be cross-plowed with a square pointed scooter, close and deep as it can be done. The husbandman must now determine for himself as to what his land will bear or how thick his corn will grow. It is a fatal error to undertake to grow too many stalks on the land. The hill system is better than the drill for the reason that it is more convenient to arrange the corn the proper distance apart and less trouble to cultivate it. I would not drill unless it was hillside, to prevent the land from washing, or narrow strips that were not convenient to plow both ways; but if the corn is to be drilled, lay off the rows just as wide as the stalks should stand apart in the row, so that each stalk shall have its equal portion of land, allowing the roots to feed on an equal distance all round the stalk without coming in contact with the roots of other stalks. Any person who has ever noticed the growth of plants or trees will readily see the advantage of this system. For instance, suppose the land is able to produce one good stalk of corn on every square yard, would it be best to have two stalks to grow side by side on every other yard, or one on every yard by putting two together? The roots would immediately come in contact with each other and the stalk have to draw its nourishment pretty much from one side, and the roots from the other side would have to

travel much farther and not be likely to bring the same amount of food to the plant and develop the two stalks and their fruit so well as if each grew on its own yard. The properties of the soil would be more equally distributed among the corn plants. So with the rain, sunshine, atmosphere, and every thing else that is for the benefit of the corn plant. It is very important, either in drills or hills, to give each stalk its equal portion of territory, so that it may have equal distance on all sides. Be sure not to plant too thick. Four to four and a half feet each way is thick enough for the upland of this country, and one stalk to the hill. The rows should be run off with a good coultter or long scooter, three furrows together. First run the row and then a furrow on each side, plow deep, as this is the last chance you will have to plow under the hill. Cross with a long scooter and give the same distance. *Plant from the twenty fifth of March to the tenth of April—a good time in this part of the country. The situation and locality have much to do with the time of planting. Put in plenty of seed. It is better to have two stalks to take out than to have one to replant. Soak the seed corn in new tar. Roll it in sand to keep it from sticking together. Sprinkle pulverized sulphur over it while rolling in the sand. This is the best remedy against birds, moles and bud worm, that I have ever found. Drop the seed in the scooter furrow at every intersection of the rows. Cover with a double foot plow, two small scooters running straddling the row. This will do the work effectually, and no scraping will be needed. The corn should not be planted any deeper below the surface than is sufficient to give it moisture and depth of earth to cause it to vegetate and come up. No matter how deep it be planted, the roots will grow near the surface if they ever grow at all, and near the surface is the place to deposit the seed. When the corn gets up and has about three blades, run around it with a long scooter as close as possible. There is no danger of injuring the corn by breaking the roots at this plowing. It is very essential that the land be thoroughly plowed. All my experience for forty years has demonstrated the fact that corn cannot be successfully grown on hard land. Plow out the middles of the rows with a good shovel plow, follow in about three days with the hoe, in order to destroy any grass or weeds that

may be left by the plow. By that time you can tell better what has been left undestroyed by the plow. Replant all missing hills as soon as the corn is done coming up. Thin out to a stand as soon as it is large enough to be out of the way of birds and other insects. Thin carefully, taking the stalks out by the roots. Do not loosen the plants that are left, and be sure not to leave the corn too thick.

The after culture may depend somewhat upon the nature of the land. If the land be loose and not liable to run together and get hard, the plowing may be done with a sweep and very shallow, just deep enough to destroy all grass and weeds. Go over the crop once in every fifteen or twenty days, not more than twenty one days at farthest. The hoe need not follow unless the weeds cannot be destroyed by the plow. In that case the hoe should follow to clean away all grass and weeds left by the plow. Continue to plow and hoe until the corn begins to silk pretty generally. Have it then clear of all grass and weeds and the work is done. If the land is liable to bake and become very hard from heavy rains, it is better to use the shovel or some shallow plow, and plow pretty thoroughly, as it is better to break the roots of the corn to some extent than to have the land so hard that the roots cannot penetrate it. Corn very quickly recovers from the breaking of the roots in a well cultivated and loose soil. When nature and nature's God decreed that man should earn his bread by the sweat of his brow, and that the earth should bring thorns and thistles, knowing that man would not be able to subdue the thorns and thistles and the great multitude of weeds and grass that are so much inclined to grow among the corn and in such proximity to it without breaking the roots of the corn, he also arranged the nature of the corn plant so that it will very quickly recover from these drawbacks. The cultivation of the crop is not to be governed by any particular number of times going over. After planting, the main points are to keep the corn free from grass and weeds and the land loose and level. The more level the land is the more equally the rain that falls is distributed among the corn plants, and the same is true of the sunshine and atmosphere.

If the corn is to be manured in the hill, it is best to put the manure around the corn after it comes up, just before the first plowing—not too much in a heap, and for this reason: I have frequently seen where manure was deposited under the corn or with the grain, that it would come

*The writer evidently refers here to the climate of Northern Georgia. Corn planting can be safely done much earlier in more Southern latitudes.—Ed. F. and H.

up and make a rapid growth for a while, but about earing time it would fail, the stalk would become yellow and hard and the crop prove a failure, because the manure had either been exhausted or become dry. When, had the manure been properly applied, there was enough to make a good crop. When the manure is placed around the corn, the roots strike into it about the time the corn is preparing for the ear, and it is apt to get the full benefit of the manure and make a good yield.

Much more might be said about the different kinds of plows and implements to be used in the culture of corn, but there are only three essential points on the part of the husbandman in order to secure a good crop. The first is to have the land rich; the second is to thoroughly break and prepare it before planting; the third is to keep it clean of weeds and grass, and as loose as possible, till the crop is laid by. The plow and other implements that will most effectually accomplish these ends with the least labor, are the best.

The plan above given for the culture of corn is one based upon long, personal experience, and close observation. The turn-plow and subsoil-plow have not been much used by me, though I think them great improvements.

PEAS, TREES, BEES AND RABBITS.

Mr. Editor: Do the rabbits eat your peas, or skin your trees? If so, I give you a simple and sure preventive. For apple trees: wash or paint them with clay and blood. This will protect them for many months, perhaps a year.

For peas, cut and mangle a rabbit, drag him several times around and among the peas, then cut and tear him into fragments, skin, flesh and entrails, scatter the pieces among and around the peas. Not a pea will be eaten afterward. Now, whether the rabbit is too dainty to sit down to such a dinner, too timid to face such frightful sights, or considers it too dangerous to tarry, I leave to the curious and learned zoologist to determine.

My informant, a truthful, practical man, plants for late use, in his corn or cotton fields, in low places, with as much security from rabbits, as in a closely paled garden.

This is as simple and successful, as "settling" swarming bees by raising into their midst, a wisp of old mullein stalks (all studded with their seed pods,) tied to a pole and then, after the bees begin to settle, placing them where they can be most conveniently hived. But to please the printer I must be

SHORT.

For the Southern Farm and Home.

HILLSIDE DITCHING.

Mr. Editor:—In the November number of your paper, is an article by Mr. Hardwick, on Hill Side Ditching, which, while it presents much that is useful, is not without fault. I only propose to make a very few remarks on it. And first as to the level. With Mr. H., I prefer the rafter, but of wide span, say one rod, and only four and a half feet high, with spirit level attached, by a hinge, at one end to the cross bar, and gliding up or down at the other between two vertical slats screwed to the cross bar and rafter piece, (one on each side,) serving as a guard to keep the spirit level in place, and on which to mark a scale of inches, for various grades. The unhinged end of the level is raised or lowered, by a screw through the cross-bar. I prefer a low rafter, because it is more portable, and less acted on by the wind, an advantage much valued by all who use the level in person, during high winds, and a wide span is preferable, because more expeditious and accurate. I prefer a level hinged on, with a scale, as above, because it may be instantly adjusted to any grade, (without hammer, screw-driver, or foot block) simply by turning a screw with the fingers.

Next, I prefer to hoe chops, small sticks, 15 or 18 inches long, to indicate the track of the Level. 1st. For accuracy: the stick shows precisely where the foot of the rafter rested; not so, the hoe-cut. 2nd. Expedition: a stick may be stuck up in less time than a sufficient hoe mark can be made. 3d. Because all unnecessary zigzags may be rectified, (without detriment to the general grade) more easily than when hoe marked. 4th. Because the plowman can see the stakes some distance ahead, (without stopping to look out his way, or requiring a hand to lead his horse) which would be impossible, where the hoe is used, especially in weedy or grassy land, or even in common stubble.

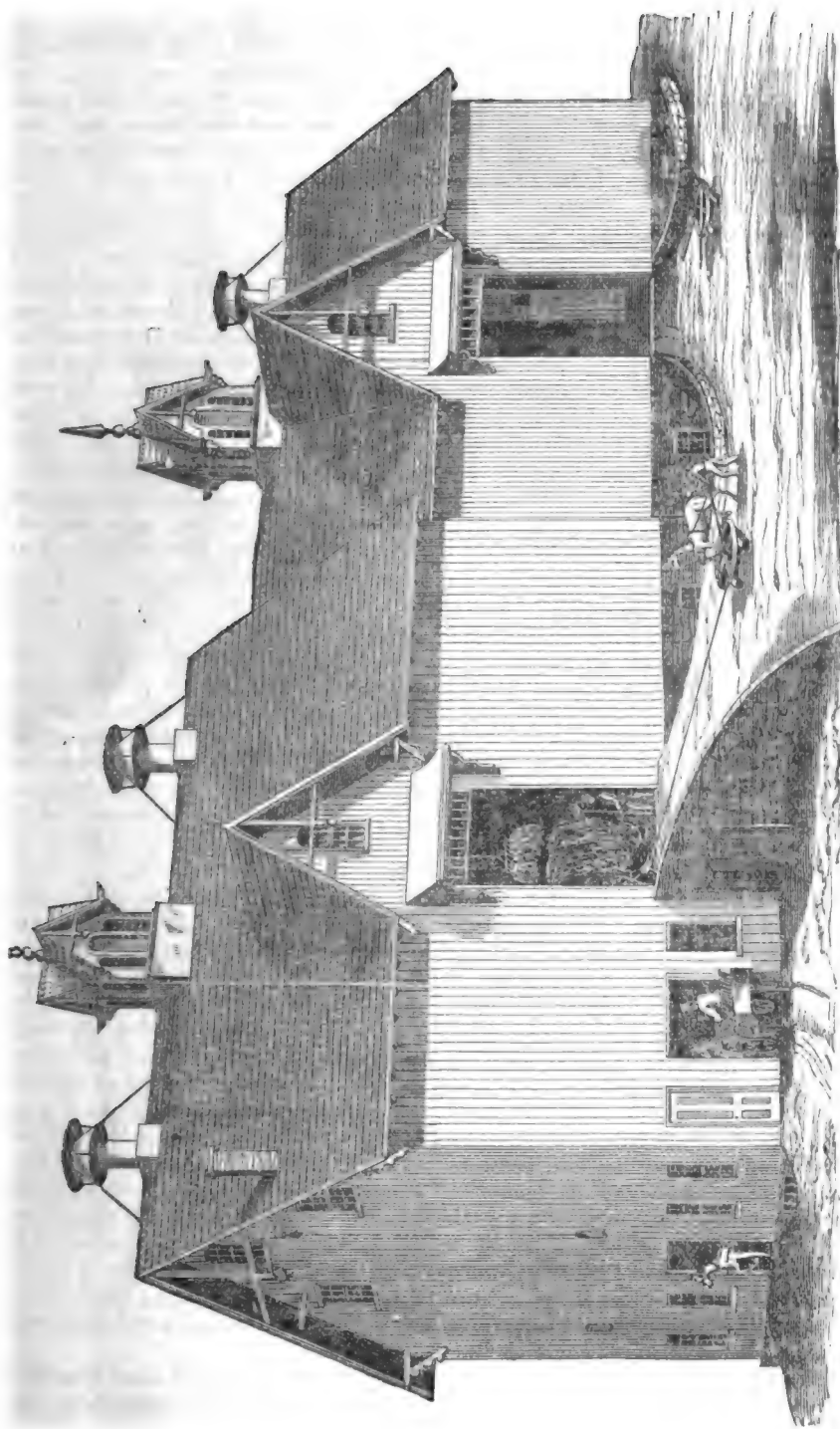
I prefer less fall than Mr. H. recommends, because many hundred acres, under different management for more than 30 years, showing gullies healed and fields saved from them, seem to justify the preference. Much more might be said—but enough.

HENRY GAITHER, M. D.

Oxford, Ga.

WHO IS THE BEST FARMER?—The chief motive of one in farming is to benefit his pocket; another constantly aims to improve his farm. One increases personal property and squanders or secretes it, so that the tax list of the town is diminished; the other converts labor and personal property into real estate, and increases the assessment list and the real value of the whole town. The one is a robber, the other a benefactor.

PROFESSOR J. B. TURNER, in his work on The Cultivation of Field Crops and Preparation of Soils says that "deep plowing is required to secure the influence of heat, light, air and water which contribute nine-tenths of the productive elements of the plant, and that no soil can be crushed too fine for any crop, while it is usually left far too coarse for all crops."



MODEL BARN—NORTH WEST VIEW.

FARM BUILDINGS.

Now that our rich planters can no longer invest their surplus cash in more "plantations and negroes" (we mean the combination of realty and personalty, not the real estate by itself,) and that the desire to introduce an improved system of agriculture is becoming almost universal amongst them, we should like to see some improvement introduced in the construction, arrangement, and style of the plantation buildings.

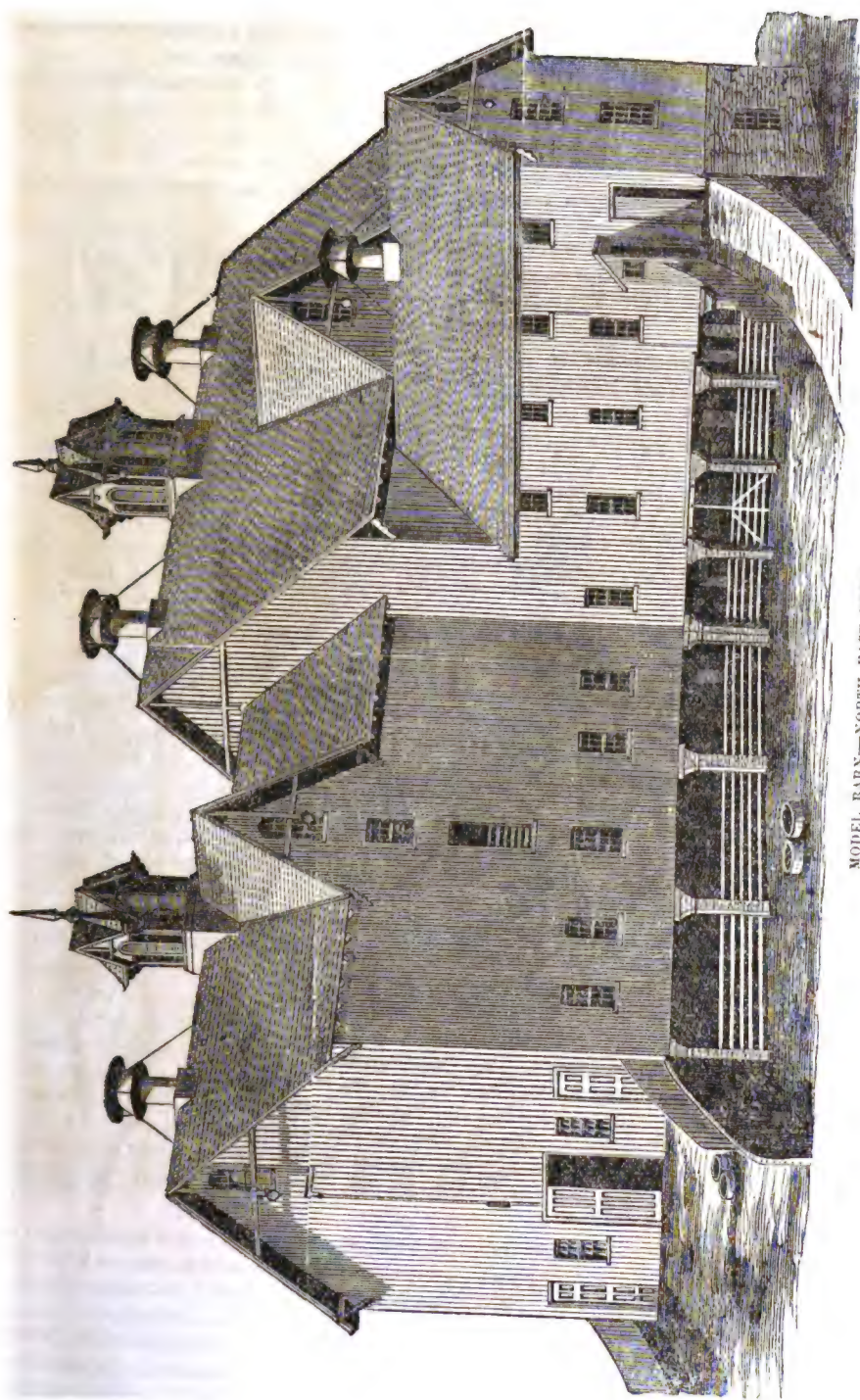
Under the old system of agriculture by which lands were made to yield crops of cotton and corn until from sheer exhaustion and starvation they could yield no longer, and were abandoned, the owner moving off to fresh soil to repeat the process until it in its turn became exhausted and another move became necessary, it was not unnatural, though it was never wise, that the farm buildings, should have been of the rude and "make shift" character which are to be seen on most plantations. But now that the nomadic system has been abandoned and we have recognized the necessity to improve the land we have—now that we have become *settled*, and are striving nobly by the use of two horse plows, subsoilers, rotation of crops, clover, stable manure, and commercial fertilizers, to retrieve our past errors, reclaim our waste places, and make our thin, wasted, and gully-seamed old fields yield their 45 bushels of wheat and their 500 lbs. bag of cotton to the acre—might we not push our improvements a little further, and instead of keeping our fodder and oats in ill-contrived stacks in the fields, instead of a rail-pen for our shucks, instead of a shackling crib of ill-jointed logs for our corn, and a cracked and comfortless "pole shelter" for our mules, horses and cattle, might we not construct a good substantial barn capable of containing all our fodder, oats, corn, wheat, shucks, straw, horses, mules and stock under one roof and within one enclosure?

The rail-pens, log-cribs and pole shelters are not only hideously unsightly and slovenly, but they are the most expensive buildings that could be erected. The manner of their location, mode of construction and exposure to the weather and to thieves, cause more waste and loss in five years on a plantation of twenty hands, than it would cost to build the finest kind of barn. We do not allude to the additional attractiveness of neat, commodious out-buildings on a farm, or how they constitute an additional stimulant to an improved system of agriculture, as an investment of taste and attachment as well as of money, but it is certain that every improvement

we make, every comfort we add to our homes, and every tree we plant, creates and fosters that home feeling which is the mainspring of *permanent* improvement.

A well built barn will last for half a century, with ordinary care and without much expense for repairs. We have almost all the materials on our plantations, and the cost of building is small compared with the sums which Northern farmers expend for the farm yard improvements on their comparatively small farms. The New England farmers who know the exact value and power of a dollar, and who very rarely expend one on anything that is not pretty sure to bring back two or three, are distinguished for their excellent farm buildings, and unless they found it pay and pay well, to build them, we know full well that they would never do so for mere beauty's sake. No, it pays abundantly to have your corn-crib, your oat and fodder loft, your wheat and other grain, your mule, horse, and cow stables, your wagon and carriage houses, harness room, tool room and cutting room, and beneath them all, your manure pile, under one roof and within one enclosure, so secured that when the gate is locked and the key in the owner's pocket, he may be sure that in all weathers, his stock are safe and comfortable, his grain and fodder secure and dry, and his property effectually protected against thieves and depredators. Instead of sending a negro to the shuck pen for an armful of shucks, another negro to a fodder or oat stack for a few bundles of fodder or oats when they are needed, leaving the rest of the pen and the stack exposed to the weather, and dropping by the way half of what they try to carry—instead of sending in another direction to the log-crib for a basket of corn, and carrying all this in still another direction to the "pole-shelters," let one good building take the place of all these scattered and heterogeneous arrangements in various stages of decay, and money, time, labor, and anxiety will be saved to an extent of which we can form no idea until we try it. It can be so arranged as to produce the maximum work performed, with the minimum of exertion, and to enable the owner or manager to superintend the whole structure in its every department once or twice a day with a quarter of the labor which it requires to look after the present tumble-down concerns which serve for farm-buildings.

There is not much in Yankee manners, customs, religion, morals, literature or politics, which commends itself to adoption by the people of the South. We cannot for the life of us



MODEL BARN—NORTH EAST VIEW.

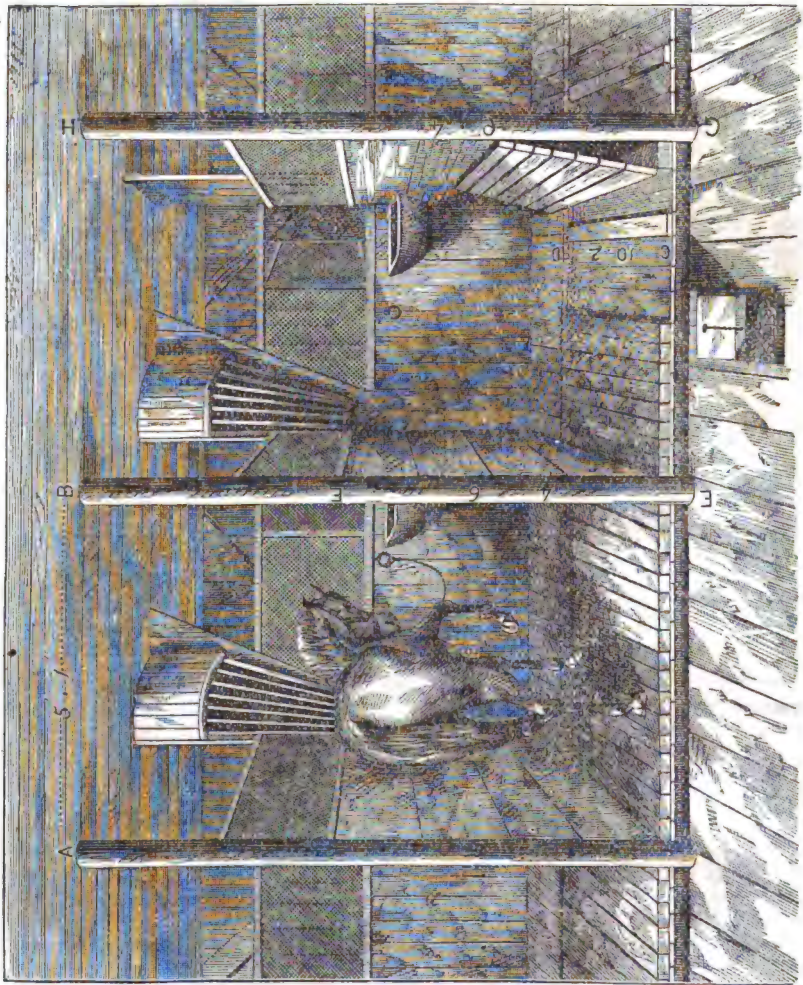
appreciate their peculiar "civilization" at the value which they put upon it. But a genuine Yankee barn is an "institution" which we should wish to see turn carpet-bagger and spread itself all over our country. It is the perfection of economy and comfort, and where a mixed husbandry is practiced, cannot be surpassed in attainment of the purpose for which it is built.

The better to explain the object of this article and present more clearly to our readers the

capacity and arrangements of a barn, such as is found on hundreds of small farms in the New England States, we have obtained drawings of a model barn, engravings of which will be found on pages 157 and 159.

This model barn is represented standing upon the side of a hill, sloping to the east, and consists of a main building 55 by 80 feet with two wings 56 by 31½ feet, and has three floors.

The engraving at the commencement of this



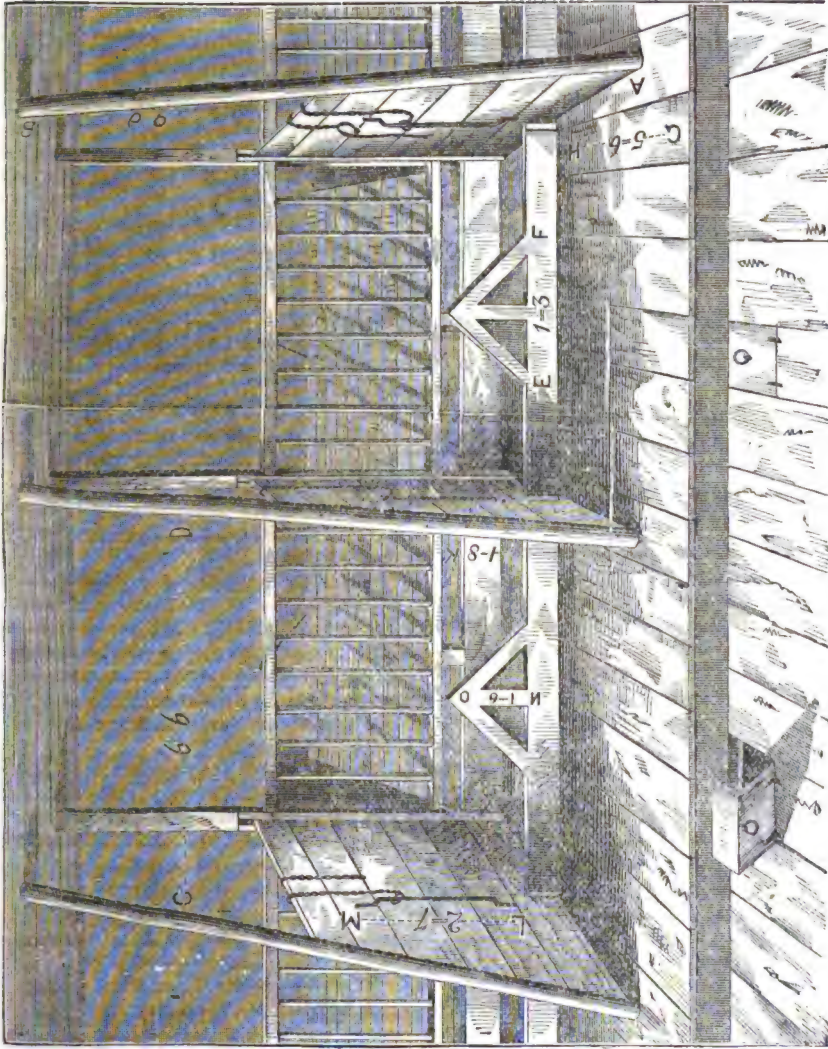
article gives a view of the building from the northwest, showing entrances to two floors, the one raised, leading to the hay floor, and the other leading by a decline in the ground to the stock floor. In the former all the hay, grain, straw and stalks are stored. Two threshing floors 16 feet wide, cross the building with an entrance

from the west. On one of these is a hay scale, and in the other there is room for a horse power and hay cutter, by which all forage is cut up and delivered by a chute into the feed trough below. Here too are the grain and meal bins which also communicate by chutes with the stock floor below. The whole floor is perfectly ventilated.

The stock floor is 9 feet four inches high and is entered by the door at which the wagon is seen entering in our first illustration. On the right is a large carriage room, on the left a room for keeping harness. In front are stalls for eight horses, 10 ft long, 5 ft 1 inch wide, and separated from each other by partitions $4\frac{1}{2}$ ft high, surmounted by strong wire cloth extending 2 ft higher, and 5

loose boxes for horses, 12 feet wide. A wide passage extends through the building from North to South, from which stairs or ladders (which can be fastened back out of the way when not needed,) lead to the hay and grain lofts. In the wings are seven stalls for cows, eight for calves, and twenty stalls for fattening cattle.

Underneath the stock floor is a basement for



manure, roots and hogs, as seen in the second engraving. The engraving of the horse stables on preceding page gives the best and most accurate idea of their arrangement. Attention is drawn to the channel or gutter in rear of the horses to receive and carry off the liquid manure, and to the trap doors, one of which is opened in the

illustration, through which the solid manure is thrown into the cellar below.

We also give above an engraving of the cattle stables, giving a representation of two of the stalls. The passage in front of the racks is ten feet wide, through which carts may be driven, distributing the food for each animal. The

stalls are 6½ feet wide and are arranged for two cows which are fastened by a neck-strap, attached to a short chain and ring, playing up and down upon a rod bolted to the partition between the stalls.

The foregoing description, for a great portion of which we are indebted to a report of the Agricultural Department for 1867, applies to a very expensive barn; but a cheaper and a smaller one can be built upon the same general plan, which we think is perfect. It combines room and comfort for men and beasts, and affords perfect security for the property enclosed within it. A cellar to contain manure unbleached by rains and unburnt by the summer sun; above this, ample room for horses, mules, cows, etc., with places for carriages, wagons, harness and farming implements, and still another floor for grain and forage of all sorts—all built within an enclosure of sufficient size to afford yards for the stock, convenient access by wagons to all sides of the building, well supplied with water and drinking troughs—constitute the sort of barn which an improved system of agriculture demands, and without which, success can be only partially attained.

The Labor Question and the Agricultural Resources of the South.

PRIZE ESSAY BY FRANCIS FONTAINE.

(Continued from February Number.)

Though we will have to contend against the efforts of East India, Egypt, Algeria and the Levant, Brazil, Peru and the West Indies, Turkey, Smyrna and Greece, American cotton is indispensable to the English manufactories, both for warp and woof, the short staple India cotton being used almost exclusively for weft or filling. The quantity of India "Surat" depends on the quantity of the medium staples American cotton.

*Only three kinds of cotton are used in the world for manufacturing purposes:

1. Sea Island, grown on coasts of Georgia, Florida and South Carolina.
2. American, medium staple "Uplands" and "New Orleans."
3. The short staple cotton, "drier and fuzzier," grown principally in India.

Of these, the first and third classes of raw cotton are needed only in limited quantities; while the second is needed universally and an unlimited supply can be consumed.

The soil, the peculiar climate influenced by the Gulf Stream "causing a regular system of irrigation from the clouds wafted from the bosom of the Southern Seas, and producing the moisture and heat so requisite during the summer months to the

health and vitality of the cotton plant." The Pernambuco, Mucão, Bahia, and Santos Cottons, are produced by damming up the "rigolettas" of melted snow that come from the Cordilleras, thus irrigating the soil and maturing the plant in that arid climate. *But for the terraces and canals of Peru, which convey the melted snows from the Andes, she could not grow cotton at all. In Egypt, despite the vast expense of canal dues, steam machinery, and English coal for fuel, the thick population and necessity for raising breadstuffs will keep down the supply of cotton to a certain limit. In 1865, in the effort to exceed this limit, 350,000 people perished from starvation. The crops of Turkey and Greece have not materially increased, and Smyrna may as well replant her fig and fruit trees. In 1866, owing to same cause as in Egypt. In Orissa and Eastern Bengal, over 1,350,000 people perished from starvation."

We may then defy competition. But would it not be well for us to examine into the system of irrigation practiced in other cotton growing countries? "It is estimated that Georgia alone, the present year has consumed over twenty thousand tons of commercial manures, in guano and phosphates, improving her cotton lands." While we rejoice at this, we cannot but think that the same amount, in a country so blessed with perennial springs, and abundance of water, would, if annually invested in irrigating our lands yield a greater profit.

Experience has demonstrated that tropical sugar cane is most remunerative in the South, below 33 deg. latitude.

Since the necessity for American cotton to the English manufactories is at present absolute, and we can calculate the amount necessary to be raised, so as to keep our exports limited to the quantity that will insure a remunerative price to the producer, Agriculture, as regards these two staples, may become a science of almost mathematical precision.

But it is a fallacy to suppose that scarcity of labor, is the only means at our disposal to effect this end. Political economy would be a false science if this were true. "In 1848-49, with 900,000 to 1,000,000 bales of cotton in Liverpool, cotton sold in Augusta, Ga., at from 4¼ to 5½ cents per lb. With 350,000 to 400,000 bales at present in Liverpool, cotton is selling at from 25 to 29 cents per pound."

"Your prosperity depends on scarcity of labor and a high rate of interest. The value of your labor being fixed by the value of cotton in Liverpool, where interest is low."

The above reasoning from the most prominent of our Georgia Planters is plausible at first sight. The increased production of cotton at present prices will necessitate a rise of wages to the "hands." While a rise of wages does not cause a

*Report of Special Committee, Commercial Convention, Memphis, Tenn.

*Report of Commercial Convention, Memphis, Tenn., 1867.

†David Dickson.

rise in prices, profits inevitably fall in proportion as the cost of labor becomes greater.

If capital flows in with a greater volume than population, this greater capital will have to be distributed among the same laborers. What then is to keep them in the condition of laborers?

*1851—1860, crops produced in cotton growing States, not consumed at home, left a surplus of sales amounting to \$1,200,000,000, an average of \$120,000,000 per year, of which at least \$60,000,000 per year should have been added to the reproductive capital within those States. The chief part of this was really expended in importing slaves from other States."

Suppose the same amount to accrue during the coming decade, will it not have to seek other investments, such as railroads, machine shops, manufactories, etc.? If so, will not population be wealth? There is no greater danger that immigration to this country from England, for example, will cripple our profits, than that emigration from England should diminish the gross produce and the demand for labor in England, though, at a superficial view, this seems the evident consequence—but, on the contrary, this, and improvements in production, are what England chiefly depends on. Nor is it any exaggeration to say, that within certain and not very narrow "limits, the more capital a country like England expends in these two ways, the more she will have left." What makes "Interest low" in Liverpool? The social development of the most civilized of nations—England—tends to make life and property more and more secure; less risk attends investments; society is more fixed; self-control and forethought the chief characteristics of the people; *laws are impartially administered*. Result: "A profit or interest of three or four per cent. is as sufficient motive for the increase of capital in England at the present day, as *thirty or forty per cent.* in the Burmese Empire, or in England at the time of King John" †"In England the ordinary rate of interest on Government securities, in which the risk is next to nothing, may be estimated at a little more than three per cent."

Inasmuch as society is insecure and labor uncertain, the rate of profit must be enough to compensate for the risk run.

Why does England obtain the precious metals at less cost than other nations? Solely on account of the efficiency of her labor.

It is clear that our present small crop nets as much money as did our former large one. It is equally clear, that so long as this continues, it is to the interest of the Planter to retain the negro in the cotton field, where he is the "right man in the right place" and import skilled artisans for other trades from Europe.

It is further evident that the capital of the South

is spreading, and permeating every branch of industry. Are there not negro operators in our cotton manufactories? Negroes are constructing our railroads, becoming artisans and tradesmen, and gradually abandoning the cotton field.

The immigration we need is an intelligent middle class—not laborers in our fields, but mechanics and small farmers. We have a sufficiency of cotton laborers, and the force of superiority when the European mechanic arrives in our midst will force the negro to his proper sphere of labor. Let us heed the spirit of a century that has developed a Ferdinand de Lesseps—the Isthmus of Suez—which alone will seriously aid the shipment of cotton from India to England—the wonderful facilities for the interchange of products.

Let us watch the effort of the English capitalists to open up new fields for cotton, and of the French Government in Algeria. Let us remember that cotton is planted all over India, from the extremity of the peninsula of Hindoostan to the great Himalaya ranges; on the borders of rivers; in the interior; on mountain elevations, from 4,000 to 5,000 feet. Cotton is indigenous in the Barbary States. Let us embrace the offerings of science, grasp such accessions as the South Carolina Phosphates, and not emulate the countries that have known no improvement "since the days when Ruth gleaned in the fields of Boaz."

The prevalence of large landed estates, does not preclude an increasing number of small farms. Nor will the latter curtail the profits of the former unless labor be kept at a minimum. Successful cotton planters in the South have made greater net profits in the past two years than they did before the war. But that class of our people known as "small farmers" have made relatively greater profits. The farmer now has, in addition to his own family, who constituted his laboring force prior to the war, several of the former laborers of his Planter neighbor. Certainly the experience of the Planters, in the aggregate, proves that in this way a scarcity of labor has been detrimental to his interest. Nor need the sympathizers with Dr. Dixon and the students of his philosophy flatter themselves, that "strikes" can be long postponed should this be a confirmed and immutable fact. The very mockery of a "contract" blinding a negro to work by the month or year, proves this. However stolid and obtuse he may be, he has already learned the value of his muscles to his employer, and leaves as it suits his convenience. Under the present system it would be well nigh impracticable to convey the discipline of the cotton factory to the cotton field.

Yet, it is rare that the negro leaves his former neighborhood, unless he "goes to town," his local attachments are as great as they ever were. It is not yet proved which is the best home and most profitable; but evidence claims that those who have remained with their old masters have prospered most, and are now best contented. So long as "associated labor" can be preserved on planta-

*B. F. Nourse. "The future production of Cotton."
†J. S. Mill.

tions and negroes are the laborers, large exports will follow, and large plantations will doubtless be most profitable.

The results of investigation show that it will be very difficult to supply the place of the negro as a laborer, for "cultivation spontaneously finds out the organization that suits it best." It is proverbial that agricultural people are adverse to change. A change of system of labor involves certain loss to some, possible loss to all. The "organization that suits" cotton culture best is undoubtedly that most allied to the system pursued before the war. The negro is still unfit to labor with profit without the direction of a superior. Again, added to the lapse of time necessary before the negro will outgrow the customs of a lifetime of dependence, is the well known fact, that "there is much more labor expended in the superintendence of many small capitals than in one large capital. A planter managing one hundred producers has superior economical advantages over one hundred laborers whose united capital only equals his. But large plantations cannot be safely rented to third parties.

*Give a man the secure possession of a bleak rock and he will turn it into a garden; give him a nine years lease of a garden and he will convert it into a desert.

To actual settlers, and these settlers Germans, large plantations might be profitably sub-divided and sold in lots. This would create diversity of products, which in turn, always makes labor less onerous. As additional land owners, these intelligent laborers will prove the law that increase of population causes increased production, and this will certainly enhance the value of land. When it is remembered that nearly one half of the cleared lands of the South are uncultivated for want of labor, and that increased production of cotton will avail nothing without additional hands to *pick it out*, no further argument seems necessary. We can not well save more than we now grow, and "the necessities of Europe and America require at least 6,000,000 bales annually, to keep their machinery moving."

"Since the inventions of Arkwright and Watt the capital in cotton manufactures has quadrupled, while population has doubled, yet wages of the operative are as high as formerly."

We may claim as a general fact, that on all soils where small farms are most profitable, large farms will gradually be rented or sold to small tenants or proprietors, and *vice versa*.

In most instances the small farmer pursues a mixed husbandry.

England is the best index to the large farm system, while France probably conveys the best idea of the small farm system. In both we see the two moving harmoniously, neither detracting from the general profits of the other. Since 1840 there has been no reduction in "Small Holdings" in Ireland.

*J. S. Mill, Political Economy, Vol. 1, page 429.

Seven-eighths of the land are owned by large farmers, and these yield as great a produce per acre as in England or Scotland. But the position of the 307,000 small farmers who occupy the remaining eighth is very different. The distress is mainly confined to them. In Ireland, as well as in England, it is held that 15 to 20 acres is as little as a man can support a family upon. Yet there are 8,900,000 people in France whose estates average eight and a half acres.

Out of 5,000,500 landed proprietors, 4,000,000 are peasant proprietors. "Since 1789 the number of hectares under wheat has risen from four to six millions; that under artificial grasses from one to three millions; under roots from one to two millions; under the more peculiar and expensive crops from 400,000 to 1,000,000."

*The history of France since that period shows that the division of properties did not hurry the division of large farms; that the living, food, and clothing of the laborer improved in quantity and quality; that the cities gained in population rather than the rural districts. We shall see what will be the result of the transition from the "*grande*" to the "*petite* culture" in this country; but we opine that it will be similar. Is not the soil of the Gulf States similar to that of France?

In parts of England where the small farms prevail, they have a greater rain-fall, a deeper soil, and are more productive of grass and green crops. In the South these natural conditions will likewise regulate the modes of husbandry, and we hope with a like result. But let them remain together as in England; they need not sweep away the large plantations. The sirocco of Radicalism has done its worst in the Political world—let its heated breath spare the broad acres of the South.

*Lavergne—"Economie Rurale de la France," Written in 1846.

(TO BE CONTINUED.)

For the Southern Farm and Home.

FISH PONDS.

BY MAJOR JOHN G. BARNWELL.

NO. II.

In our first article on fish ponds, we endeavored to illustrate the most approved plan for the construction of artificial ponds, founded on the habits of fish, and under the impression that most varieties spawn in their third year. In consulting various authorities since, we have seen nothing to the contrary, excepting one in England—the carp. There may be varieties in this country that do not come to maturity so early, and we therefore state that the system proposed in our first article for breeding would apply only to a variety that does come to the spawning time in the third year.

When a single pond is to be located the position is so to construct it as to answer the re-

quirements for breeding, feeding and rearing, to the best advantage, and not that a single pond is recommended, because it is better that the breeding, nursery and feeding ponds should be separate, each demanding different bottoms which will effect more or less the quantity of their waters. The partly artificial pond now under consideration, being one expanse of water cannot combine the requisitions of all. The requirements demanded are, a certain proportion of still water shallows, of shallows under running water, and a deep clear water bed. When the supply of water is the rain from hill sides, running water is of course impracticable. It is supposed in the present plan that the pond is flooded from a brook or springs above the level of the pond.

A brook runs through the lowest level in the land or valley. When it passes through your grounds the point at which it enters is the highest level of the water. The capacity of the pond to the number of fish contained, will be in inverse proportion to the volume of the brook; that is to say, the greater the volume of impouring water, the less the area or expanse of the pond for the support of a given number of fish. If you thus determine the number of fish needed for home consumption, or for a limited market, you may determine the area of the pond after having ascertained the volume of the brook. Suppose a still water surface of sixteen feet furnishes sufficient air for the life and health of one vigorous fish, then two or more added would, by consuming the oxygen three times as fast, be destruction to the life of all, but by changing the water in the same proportion, the same area will support the three in full and vigorous life. To find the volume of a brook, find the time a light chip or feather will float over a given distance—say ten feet—find the area of a section of the brook at the point at which the chip was dropped, multiply this by the distance, ten feet, and you have the volume of water which has passed in the time observed. We find in the Government Agricultural Report for 1868, the following data, viz: "Nine thousand full grown brook trout," averaging three pounds each, or two thousand and seven hundred pounds of fish, in full health, in an excavation of "seventy five feet in length, by thirteen broad and five feet deep," being four thousand eight hundred and seventy five cubic feet, or thirty six thousand five hundred and sixty two gallons of water, supplied by a brook emptying two thousand eight hundred and eighty gallons per second, changing all the water, or supplying

all the oxygen needed, every eleven seconds and twelve four-tenths of a second. This supports nearly two fish to every cubic foot of excavation, or nearly six pounds of flesh to every foot, which in market at ten cents a pound, is worth twenty seven hundred dollars. Now, according to data given in our first article, the area of seventy five feet by thirteen would supply in still water, air for fifty one fish. This is sufficient to show the importance of a supply brook, and the importance of determining the volume discharged per second, as a question of economy in the construction of the pond. We have then as certain data, that every cubic foot of water changed every twelve seconds, will support two three pound fish, or six pounds of flesh worth sixty cents. Reducing the supply brook one half is to reduce the number of fish one half—or, doubling the area of the pond for the same number of fish.

Brooks, like rivers, are liable to freshets. The site of a pond within the influence or effects of freshets would be as eligible as a quicksand for the foundation of a building. Brooks liable to freshets, should be deflected from their natural channel from the highest point of level practicable, and at the point of deflection so engineered, as to force the flood of the freshet back into its former course, thus while securing the constant supply of water necessary, you at the same time save the pond from injury and the fish from escaping. As the water in a freshet is more or less turbid with the debris from the bed of the brook and washings from the sides, it would be well to put down at the point of deflection, a flood gate, either water tight or slatted (this depending upon the discoloration of the flood) to protect or keep clear the water in the pond, which is practicable, since the freshets in brooks are of short duration. The nearer the pond is to the head of the brook, the more secure from floods and also less liable to changes in temperature, which last is of importance in the hatching of the ova.

Having given all the data we can adduce as to supply and area of water, sufficient for an intelligent man to engineer his own work, and also as regards safety of location, we proceed to the construction of the pond, stating here, that the directions are general—for the different locations and volumes of brooks would necessarily require different management as to the plan or contour of a pond, yet accord with the general directions.

Where a brook not liable to freshets furnishes the water, determine the capacity of the pond

for the number of fish you propose to supply by the rule given. Mark the point of level at the lower extremity of the pond to which the water is to be raised, and which will be the height of the retaining dam. At some point above this dam, and the nearer to it the better, run on each side with a levelling instrument with a rise of about six inches to the hundred feet, until you enter the brook. These levels will be the channel of the two leads deflecting the brook to the right and left, which will be more or less parallel to the contour of the pond, but of course above the level of its water. The object is, to have as long a stream of running water as can be had before it enters the pond, to form artificial spawning beds for your game fish. By this arrangement the water enters the pond near the retaining dam, the expanse and volume being above the feeding brooks. You may form currents and eddies in the pond by turning the leads to debouche up towards the head, causing motion in all the water, both above and below the leads. Cut out the two leads, for the first work done, and up to within two or more feet of the bank. Make the section of each lead one half the section of the brook, that each may carry the same depth of water as the main brook, although but one half the volume. Haul the earth excavated out of the leads up to the head of the pond and level it off to form the still water shallow, and bring up the surface within one foot of the water level. These shallows should be one fourth of the area of the pond; if then the earth out of the leads is not sufficient, cut out from the hill sides the quantity wanted.

The next work is the retaining dam. At this point cut out a ditch one foot deep and two wide in the direction of the dam—this to be refilled, and on it place the embankment of the dam with earth cut from the hill sides, above the level of the water. The object of the ditch under the dam is to dovetail the work into the ground to prevent leakage—and it is the only way to prevent it in earths free from clay and under a heavy pressure of water. If you have in view a lower pond, let the water fall over the dam, the top of which must be paved with rubble work grouted with cement and provided with a fish check. The dam should have a slope of three to one towards the pond—if there is a lower pond, each side of the dam should have the same slope, unless revetted with timber or masonry. The object of the fall is to aerify the water, making it as pure for fish as that which enters the first pond. If you do not design more than

one pond, then build a culvert on a level with the brook, provided with a fish check door, and also with a watertight door. A cross section of the culvert should have the capacity to discharge all the water that the brook flows into the pond at its maximum, and by attention to the discharge by lifting or depressing the water door the water in the pond is kept at a constant level. Having advanced so far with the work, cut the two deflecting leads into the brook, and dam across the brook two or more feet below their mouths. The bottom of the leads should be covered with gravel to form spawning beds for running fish, as the trout or rock. Set out on the edges of the leads and on the still shallows, water plants, as the rush, water grasses, mosses, etc., in the deeper water, lilies. On the banks of the leads set out some dense dwarf evergreen, as fish will not readily ascend shallow water open to the sky. In the deep water throw in large rocks forming cavities and rubbing places for the fish to free themselves and fins from water lice, as they enjoy a good scratching as well as the stock of the Dean of St. Paul's.

The foregoing is for the site of a pond near the highest level of the water where the brook enters the boundary of your grounds. If practicable it would be cheaper to place the pond at the most distant point from the highest level, if the fall of the land suits, for then you have the bed of a long brook for the spawning ground which does away with the necessity of artificial leads. In either case, fish checks should be thrown across the supply brook at some point within your ground, otherwise, running fish will ascend as far up as the depth of water will permit into your neighbor's grounds who might set fish traps and take the best fish when in roe, decreasing by hundreds of thousands the small fry.

In the management of brooks liable to freshets, the work is far more expensive. In this case, locate the pond at some point where the land extends out into levels of sufficient area on one side of the brook, parallel with which build a dam at least twenty feet from the bed of the brook, with a double slope, in to the pond and out to the brook. If rocks are to be had, use them to protect the outer slope, as high as the freshet rises in its maximum flood—if no rocks, then use plank for the same purpose. At right angles to this dam, build the retaining dam up to the land slope. At the upper end of the dam which is parallel to the brook, deflect the channel of the brook into the pond, and

put down a gate, water tight, and capable of sustaining the pressure of the highest flood. At this point throw a rock wall across the brook high enough to force the water into the gate or just a few inches higher than the ordinary level of the water. When threatened with a flood, close the gate, forcing the water back into its original course. If the pond is some hundred yards below the highest level you control, the bed of the brook will be the spawning ground, but if the pond is near the highest level, then, after putting down the gate, run a lead to enter the pond at the most distant point, so as to secure for the fish, as long a stream of water as is practicable.

In the improvements of natural ponds supplied by brooks, enough has been said as to the management, to direct attention to their importance. Where the supply is from springs and rains, too much attention cannot be paid to the forest growth around the shore line, to prevent evaporation in time of droughts. If other depressions in the land are near, cut a ditch into one and form a small second pond, into which the young fry will swim for protection—as these, as soon as hatched out, are always found on the shallow edges where they seek safety from large fish. After a year, draw this pond with nets and put the fish into the main pond. Form shallows of gravel for breeding ground for trout, or rock—if stocked with perch, throw in the boughs of trees, if the pond has not any quantity of water plants, as the ova of the last genus adhere to the leaves or floating straws near the surface of the water. Use a rifle for the extermination of frogs and kill them off, also kingfishers, cranes, curlews, or birds of any sort which live upon fish. Free the pond from eels, the most destructive of all to the small fry. For the eel set lines to the end of which a tangled bunch of pack thread is tied, in which is fastened the bait, as stale meat, or the entrails of fowls. They rarely take the hook, yet we have seen a half dozen at a time come up with their gums or teeth tangled in the thread. Stock your pond with *one* genus, excepting the minnow tribe raised for food for the stock fish.

The profits of pisciculture depend upon the intelligence and care used in its pursuit, and as far as ascertained, it can be made more profitable and more certain in the yield per acre of area than the culture of vegetables, provided your market is not too far from the location of the fishery. The drawback is, that it takes three years from the first outlay before the stock of fish is marketable—after which with

proper attention there can be no failure. The first cost, (if the works are thoroughly constructed) is the only expense, except the attention, more than the labor, of one hand for a part of each day. We propose in the next number to discuss the economy and profits.

For the Southern Farm and Home.

A Sketch of the Government Agricultural Department at Washington, D. C.

BY C. P. CULVER.

"Subdue the earth," was among the early commands of God to man. Now, whatever other meaning may attach to this expression, we certainly must admit that its primary signification has reference to the culture of the soil, and the bringing it into subjection to the will of its delegated master. The Deity prepared the material and gave to man the power to use that material aright, and through the medium of this use to make the solitary places glad and the wilderness to bloom and blossom as the rose.

Whatever, then, advances agriculture, either by man's hands or his brains, renders him a co-worker in the fulfillment of the laws of his Creator; and, he therefore becomes a co-worker with Him in conferring His blessings upon the human family.

The earth gives us directly or indirectly all we need or can employ for our physical support. In her great storehouse lie concealed our food and raiment, and it is in the brain of man alone to find the key which unlocks the treasure. How much she would give to us did we fail to use that key may be inferred from the study of life among the idle roving tribes of this and other lands: and what our country is to-day, agriculturally, compared with what it was when Columbus first set foot upon it, but verifies our Lord's assertion: "To him that hath shall be given, but from him that hath not shall be taken away even that which he hath. For I am a hard master, reaping where I have not sown, and gathering where I have not strewed."

Whatever value we may attach to mere physical force, we must concede a far higher value to the mental operation which gives that force its right direction. Thus, the man who plows the fields may look with pride upon his finished work, and presumptuously fancy that to him alone we are indebted for the rich grain it nourishes, brings forth and perfects, little dreaming that had not *thought*, far higher than his untutored mind ever grasped, been previously at work, he would to-day be stirring the earth with a crude primitive plow of wood, or even in the absence of all knowledge of the culture of the soil, be satisfying his hunger upon the products of the hunt or the fruits of the primitive forests. We thank God for the rain and the sunshine, but let us not forget at the same time to thank Him as well for the fertile brain, without the due exercise of which, the rain and the sunshine would fail to produce its "seed-time and harvest."

From the advancement made in agriculture during the past few years, we are led to the belief that in this country at least, the work is yet

in its infancy, and if so, who would attempt to calculate the results when every appliance of art and science is brought to bear in a proper manner in the cultivation of the soil?

That the soil has capabilities yet unknown, is a proposition more than hypothetical, and hence it becomes the duty of governments, and especially our own, in that it claims to legislate for the securing of the greatest amount of good to the greatest number, to furnish every aid possible in the prosecution of those sciences bearing directly upon the all-important and paramount subject of agriculture.

Happily we may exclaim, the initiatory steps have already been taken in our country and by our government, by the formation of an Agricultural Department at Washington, which, within the space of a few years, (though amid great difficulties for the want of adequate appropriations by Congress and other untoward causes) has grown into beautiful and systematic proportions, giving promise of vast utility to the whole country.

Whatever of originality there may be in this organization of an Agricultural Department at the seat of the Federal Capital, and under the supervision of the General Government, must be ascribed to Mr. Elsworth of Connecticut, formerly Commissioner of Patents. Through his influence Congress appropriated between the years 1839 and 1847, \$12,000 for the purchase and distribution of agricultural seeds. But as early as 1842, in his annual report of that year, Mr. Elsworth urged upon Congress the importance of organizing a separate and distinct Agricultural Department. The subject was agitated from time to time both in Congress and through the leading press of the times, and in 1847 the Commissioner of Patents, in his annual report, gave to Congress and the country an extended report upon the subject of agriculture, giving the results of the past four years' experience in this division of his Bureau, and making many valuable suggestions. From 1847 to 1862 Congress continued to mete out, with a sparing hand, her annual appropriations to meet the demands of the rapidly increasing wants of the agricultural interests of the Union.

Notwithstanding the great deficiency of means in the hands of the Commissioner for carrying out the objects of this division, there were distributed seeds, cereals, plants, slips and cuttings of various kinds, a large amount annually to all parts of the United States through Senators, Representatives and Heads of Departments, affording to agriculturists, horticulturists and others, many rare and desirable advantages in the introduction and improvement of grains and fruits as well as disseminating a knowledge of, and encouraging improvements in the varieties of domestic animals. The experiments here made, and knowledge gained, were seen and felt throughout the country, causing a demand by the more enlightened agriculturists of the several States upon the Department for enlarged facilities in the distribution of not alone the cereals and other agricultural products, but the dissemination of a more thorough theoretical knowledge of chemistry, botany, entomology, and other kindred sciences which are indispen-

sable to the highest practical success in agriculture.

In view of the foregoing demands, Congress, on the 15th of May, 1862, passed an Act establishing the Department of Agriculture, and shortly, thereafter, Isaac Newton, of Pennsylvania, was appointed by Mr. Lincoln, first Commissioner. On the 1st of January, 1863, Mr. Newton presented to the public the first separate annual report on agriculture. In this report he recommended to Congress—borrowing the idea from Judge Buell, of New York, who spoke and wrote contemporaneously with Mr. Elsworth—“to take into consideration the securing of land and the erection of suitable buildings, for the successful accomplishment of the designs of the Department, where statistical and other information might be collected and published to the country; where animals, seeds, cereals, plants, slips and cuttings might be propagated and distributed: inquiries of farmers answered; agricultural implements tested; soils analyzed, and professorships of botany and entomology established.” Congress, acting upon these suggestions and recommendations of the Commissioner, passed an Act appropriating \$130,000 to meet the expenses of the new department for the fiscal year ending June 30, 1864. A site was also selected for the erection of suitable buildings for the accommodation of the Department, plans submitted, and the erection of the present edifice awarded to Francis Gibbons, Jr., of Baltimore, in the latter part of the year 1867. The erection of the building was promptly commenced and carried to completion during the following year.

The death of Isaac Newton, which occurred on the 19th day of June, 1867, rendered it necessary for the chief clerk to assume the duties and responsibilities of the late Commissioner, and on the 25th day of November, 1867, submitted to President Johnson the annual report for that year, and in which Hon. Horace Capron, the newly appointed Commissioner, united.

Mr. Capron, though receiving his appointment in the early part of November, 1867, did not enter upon the duties of his office until the 4th of December following. He had, subsequent to the close of the war, settled in the State of Illinois. For many years prior to his removal to the West he was a citizen of the State of Maryland, where he had long been noted for his high personal character and literary attainments, as well as for his eminent success as a scientific farmer and grower of some of the finest stock in the State. Paintings from life of some of these may be seen in the reception room of the Agricultural Building. His appointment gave general satisfaction and was an augury of success to the future of that Department.

On the 1st day of September, 1868, the Commissioner took possession of the new edifice—a view of which the reader will obtain by reference to the frontispiece of this Journal. The building, which is a brick structure, four stories high, including basement and attic, with quadrangular ends of five stories, the whole surmounted by a handsome French roof, the north front being ornamented with agricultural designs, is situated near the Government reserva-

tion lying between Twelfth and Fourteenth streets immediately west of the Smithsonian Institute and in the southern part of the city, containing an area of thirty acres—by far too small to carry out the ideas of Judge Buell.

The building is now finished, and is supplied with an abundant supply of gas and water. The rooms and halls are heated by steam. The main entrance is from the north, a wide doorway leading into a spacious hall corresponding handsomely with the size of the building, which is 171 feet long by 62 feet wide. At the entrance an usher in waiting politely directs you to the reception room, and at once to the different departments of interest as the visitor may desire. Should your business claim an interview with the Honorable Commissioner, you will be invited to a seat, your card passed to the Commissioner—who occupies the second room to the right of the main entrance, the first being occupied by his chief clerk, Mr. McLain—where you will be received with an affability and courtesy which will put you at once at your ease and furnish an index to the high tone and culture which you will subsequently observe in the several divisions of the Department.

All the principal rooms and corridors of the building have been laid out in chaste panels, painted in encaustic oil colors, the ceiling being frescoed. The vestibule and main staircase have received a strictly artistic finish.

The “American wood-hanging” or wood-paper cut into shavings of eighteen inches to three feet wide, and many feet in length, showing the natural grain of the various kinds of wood, making the products of the forest subserve the highest efforts of the decorator, has been employed as a finish to the suit of rooms occupied by the Commissioner and his chief clerk.

The halls and rooms are lit from candelabras and massive chandeliers. On the first floor and in the west wing is found the Library, which is in charge of Dr. Stewart Eldridge. This is a spacious room, neatly furnished and containing at present 4,000 volumes, to which constant additions are making, and which already embraces exchanges from all parts of the globe wherever the least scientific attention is given to the subject of agriculture.

To the left of the main entrance and in the east wing is found the extensive Chemical Laboratory, which is in charge of Dr. Antisell, Professor of Chemistry, and his assistant, Dr. W. C. Tilden. To this division are allotted four apartments, a reception room containing a fine mineralogical and geological collection, a large work room, a smaller one for delicate apparatus and a furnace room. Here the lovers of the occult and mysterious may find the secrets of the earth revealed and her hidden riches unfolded. He may learn what she has to bestow to the faithful laborer, as well as what she requires in order to increase her capability. Here analyses and tests are constantly being made to ascertain the value, utility and properties of soils, of the various products, fertilizers, minerals and fibres.

The great benefits of this division have been seen and felt throughout the country, and it is

to be hoped that sufficient assistance will soon be granted to enable the head of this division to prosecute his researches in the investigation of truth and the acquisition of new discoveries.

Having seen the principal objects of interest on the first floor, the visitor ascends the wide, central stairway, at the landing of which he enters the spacious hall appropriated to the Museum of Agriculture, and which is 113 feet long by 57 feet wide and 26 feet high, and is appropriately frescoed with due regard to its national importance, the coat of arms of the United States surrounded by the escutcheons of the *thirty-seven* States of the Union, taking a prominent part in the embellishment. Here the museum has been partly filled with dust-proof cases of solid walnut, shaped in the best style of the art, each case being glazed with three hundred square feet of pure white glass, and provided with the most approved bronzed locks and fastenings. In these are found specimens of every vegetable production of value or interest to the agriculturist, and all so systematically arranged that any interrogatory bearing upon the subject of husbandry can be answered with an ease and promptness truly wonderful to the inquirer. No where can an hour be more profitably spent than in this department of the building. You meet here Mrs. Adams, a lady of rare abilities and attainments in a knowledge of agriculture and other kindred subjects connected therewith.

The next object which claims your attention in this hall is the extensive Glover Museum, which is the centre of attraction to all visitors. You also meet here Professor Glover himself, and in the examination of his modeled fruits, cabinets of entomology and ornithology, you will have in him an invaluable guide and instructor in a knowledge of these; and in listening to his quick and intelligent explanations, your admiration increases when you understand that the labor of collecting and arranging all these specimens was mainly the work of his own hands.

Professor Glover is not only a naturalist of the first order of talent, but also an artist, as his multitudinous original drawings and engravings testify, thus rendering his services to the Department indispensable. His history of insects and birds, their habits and modes of life; those that are beneficial and those that are injurious to the agriculturist; those that should be destroyed and those that should be preserved, is one of deep interest as well as of great value to the successful farmer, planter and horticulturist.

To the left of the main entrance to the Museum and over the Library is the extensive Botanical collection, presided over by Professor Parry, whom you will find busy too, over his well-filled shelves of specimens, yet ever ready to respond kindly and intelligently to all your inquiries.

To the right of the entrance to the Museum and immediately over the Chemical Laboratory is the Statistical Division, so ably presided over by Mr. J. R. Dodge, for many years a resident of Mississippi, during which time he gave much of his time and study to the best modes of cultivating cotton and other Southern products. It is this experience gained amid the cotton grow

ing sections of the South that has enabled Mr. Dodge to estimate so accurately in advance of any commercial report, the annual products of cotton in bales for the past four years. In 1866 his estimate was 1,835,000; in 1867, 2,340,000; in 1868, 2,380,000; and for the year 1869, he estimates the crop at 2,700,000 bales. The accuracy of his estimates for the three years prior to the one just closed, leads us to receive these figures with sufficient assurance of their correctness for all practical commercial purposes. Nor is this all of the labors of this department. A mass of accumulated facts, of foreign and domestic agriculture, with approximate estimates of current productions of the staples of the farm, are here produced, condensed and systematized, with careful analysis and explanatory illustrations and comments, and published in the monthly and annual reports of the Commissioner.

To the visitor this division presents much less of interest than any of the others, yet, it is, perhaps, second to none in importance. It is not the agriculturist alone who is immediately interested in the reports of the statistician. The merchant and manufacturer are alike largely indebted to him, and must, in the future look forward to the monthly and annual information furnished by him with anxious interest.

The fourth and fifth stories of the building are appropriated to seeds and their preparation for distribution. But for the future none but the new and rare varieties will be distributed from this Department.

Though, having thus hastily passed through the building, the visitor cannot but be struck with the admirable proportions of the edifice and its adaptation to the objects of its design, reflecting credit upon its architect, Adolph Cluss, Esq., of Washington, D. C., who executed the work in a strict compliance with the letter and spirit of the appropriation bills. The appropriations subsequently made for fitting out and furnishing the building being under separate heads, were given out directly to mechanics and business men of the highest reputation in their different branches. Superior quality of work and material have thus been obtained at very reasonable rates. The entire cost of the building, inclusive of lights, water, sewerage, furniture, carpets and scientific apparatus for laboratory, is only \$140,420, and the building contains 565,000 cubic feet of available space.

As the visitor passes from the interior of the edifice to the grounds, he involuntarily turns to catch a view of its exterior, and here the eye of the beholder is filled with the beauty and symmetry of its proportions, no where else to be found among the public buildings in the Federal Capital.

Turning from the building, the eye at once takes in the picturesque beauties and productive labors of the Floriculturist and Horticulturist, which divisions are under the care and supervision of William Saunders, Esq. Out in the free, as the Germans say, you will find him, or if not him the work of his hands or his brain. His plans are yet incomplete, but enough is finished to give the visitor an idea of the talent and energy of the master. The grounds are al-

ready, during the summer and fall months, the most attractive in the city, and are destined to become, perhaps, the most popular resort of any belonging to the Government. Young and thrifty evergreens and closely cut grass borders line the beautiful drives and walks, which are models of neatness.

Within the past year Mr. Saunders has perfected his plans for the *arboretum* within these grounds, and has commenced his collection of all trees and shrubs which are hardy, or supposed to be hardy, in this latitude, arranging them in accordance with the classification of Dr. Gray in his *Manual of Botany*, also with a due regard to landscape effect, the design being an endeavor to combine a complete *arboretum*, arranged in strict accordance with a botanical system, and at the same time produce a high degree of effective landscape gardening and pleasure-ground scenery, a combination not hitherto attempted on a similarly extended scale.

"With regard to the value of an *arboretum*, it may be stated briefly, that its utility is as obvious and important as any other museum in natural history—certainly not inferior to any in the intrinsic value of its connection with arts and manufactures, and presenting a school of instruction that will largely tend to advance our progress in the knowledge of vegetable physiology, and furnish a strong incentive to botanical studies."*

On the north side and immediately in front of the Department Building, and as a fitting accompaniment to such a structure, is a geometrical garden artistically arranged on terraces. In the rear of the building is a fountain, surrounded by a grotesque circular wall about four feet high, from each grotto of which a variety of flowering shrubs and grasses put forth their forms during the spring and summer months, catching the white spray as it falls from the jet.

The grounds to the right and left of the building and to the south of the main carriage drive, are temporarily appropriated to the propagation of the varieties of grape cuttings, strawberries and a few other fruits. They will so continue to be occupied until the erection of the Conservatory and other needed buildings, and the extension of the Arboretum, shall force them back to the contracted limits of the experimental garden.

The experimental farm has been abandoned, the area of grounds connected with the Department not being sufficient to make the experiments in agricultural products a success.

It is an important requisite of success in this Department, as in all other great public improvements, that it should secure the willing co-operation of the intelligent of the entire country. In this Department, above all others, no sectional or party interests should be suffered to impede its progress, or in any way clog its machinery. It is the duty of every member of Congress who represents the interests of his constituents, to see to it well, that each State enjoys an equal amount of benefit as well as privilege for the exhibition of her productions, besides the right of representation among its

*Agricultural Report for 1867, pp. 26.

clerical force. *There should be at least one intelligent and qualified representative from each State in the Department.* Not placed there from any political or partisan bias he may possess, but because of his *fitness* for the place, and when so found qualified in all respects, his position should be permanent and his salary sufficiently liberal as to place him above cankering care, and permit him to bend all his talents and energies in the prosecution of his labors and researches.

That the Agricultural Department shall be made efficient in the great work for which it was designed, Congress must in the future, be more liberal in its appropriations than it has been in the past. To carry out the original plans, independent of an experimental farm, it will require an annual appropriation of \$25,000 for the next few years. The vast benefits arising to the agricultural interests of the whole country through this Department are not to be estimated in mere dollars and cents, and hence the appropriations demanded by the wants of the Department should not be withheld because of the seeming large amount. Much larger sums are wasted *monthly* by an unnecessarily large standing army, without any corresponding benefits or results. Therefore, let Congress see to it, that one of the most essential Departments shall not languish for the want of the necessary means to make this arm an efficient co-worker in the great plans of a prosperous and free government.

For the Southern Farm and Home.

FARMERS, WRITE.

Mr. Editor:—Allow me a small space in your Magazine to enumerate some of the reasons why farmers ought to write for the Agricultural papers, and the reason why they do not.

Professional men and men who have followed one occupation for a number of years are supposed to be, and ought to be conversant with their various occupations. Older lawyers teach the young men who wish to become lawyers; old physicians instruct those who wish to become physicians. If we wish to know how to plant corn or cotton or how to cultivate the same we would not apply to a man who had never cultivated either. We, as young and inexperienced farmers wish to learn all we can about farming, and we wish to learn from older and more experienced farmers.

Farmers ought to write for the Agricultural papers, because it is the channel through which many young farmers get their ideas and plans of conducting their business. Mr. Dickson's letters and plans of farming have done much for the young farmers. We have many Dicksons in Georgia, if they would only let themselves be heard. We have many good practical farmers in Georgia—men of intelligence—who can write but will not. Why will they hide their light under a bushel? They will go to the neighboring store, and explain to their neighbors who have assembled there how and in what manner they plow, plant and cultivate; they will do it in a plain and intelligent manner, so that any one can understand, yet if they should be asked to write out their plans for

a newspaper why they would give almost a dozen excuses.

"Why bless my life," one would say, "I can't write good enough; the printer would laugh; he could not read my writing, and then I spell so bad, and I do not know how to punctuate or use the proper words or language." Such excuses as these keep many men from writing or telling what they know. Now as a plain country farmer let me give you this advice, and the Editor and printers will vouch for what I say.

It is not high sounding words, or well rounded sentences that always convey the best ideas. The simplest manner in which you can write or tell anything, the better it will be understood. If you can write at all the printers will make it out. I write a miserable hand, yet they manage to make out what I write. I heard an Editor say not long since that an eminent man in Georgia, a lawyer of note, wrote and spelled miserably, and as for punctuation he had none, yet he often writes for the papers, and you could not tell but what he wrote, spelled, and punctuated finely.

If you should spell cotton with a *k*, or use a little *g* in spelling or writing Georgia, or if you should forget to dot your *i*, or cross your *t*, thanks to the printers, they will spell rightly and use the proper letters.

Now I want you, plain farmers, to remember that, and write for the papers. Try it one time, and if you don't find out what I say to be true, then I will get General Browne to send you the SOUTHERN FARM AND HOME, "free gratis, for nothing."

Farmers ought to write for the Agricultural papers, because they understand their business better than other people. They can explain what they know in a plain and intelligent manner, thereby giving information to young farmers and to some old ones, which will be of great benefit. Most young farmers and many old ones, now take the Agricultural papers and many young men have been greatly benefitted by the experience, observations and plans of practical farmers set forth in these various periodicals.

Stir up then, ye fellow laborers, let us hear from you, how to make corn, cotton, potatoes, vegetables, how to raise hogs, sheep and colts, and you have many good receipts for diseases of horses and cows. Send them up to your papers. We are an Agricultural people and I wish to see it raised higher and higher, until it gets to be the highest profession in the land.

A YOUNG FARMER OF BIBB COUNTY.

DOES "BOOK-FARMING" PAY?—Every one who reads, studies, judges and practices discreetly, knows that the good he gets is more than the cost he is subjected to for agricultural books and papers—that it *pays*. Those who think otherwise do not read the books and papers, and therefore know not what they condemn.

INFLUENCE OF AGRICULTURE.—All men seek for happiness. Farming promotes health, and health pleasure. It tends to mental and moral development and to present and future happiness.

From the Soil of the South.

The Treatment and Cultivation of Corn.

BY THE LATE JAMES M. CHAMBERS.

* * * * *

THE MODE AND TIME OF PLANTING.

In a climate with summers as long and hot as ours, and where drought so frequently occurs in these hot months, it is of indispensable importance that this crop should be planted just as soon as the frosts may be avoided. And it may be remarked in this connection, that this plant, though tender, is not easily killed to the root, and the mere nipping of the young leaves of the corn does not materially affect its ultimate yield; and that we should not therefore be deterred, by any of these apprehensions, from early planting.

THE DEPTH OF PLANTING.

The roots of corn are almost all lateral, and come out near the surface; and it is therefore a matter of great importance to have the seed well deposited in the ground. To do this, the opening furrow for planting should be deep, so that the tendency of all the after workings would be to increase the depth of earth upon the roots. The seed, when deposited in this furrow, should be covered to the depth of one and a half to two inches, with soft, fine earth, placed there by the plow or hoe—the latter I think best. Three or four grains should be dropped, when only one is to be left, it being much better to thin out than to have to replant.

It is a debatable question, and therefore one about which there is a difference of opinion, as to whether the *Hill* or *Drill* planting, or the one or the two stalk system is the best. Circumstances must necessarily enter very largely into the settlement of these questions; and after all, the discretion of the planter must be often left to settle them. My theory and plans are made to suit the common uplands of the country, and may therefore be departed from as occasion and the difference in lands may require. Upon this basis I shall take hill in preference to drill planting, because of the greater regularity of distance, the greater certainty of a perfect stand, and the greater ease with which it may be cultivated; and prefer one to two stalks in the hill, because it is more easily cleaned with the plow or hoe—better sustained, as the one receives all the food from the soil which would otherwise be divided—because it will bear drought with less damage—and finally, though other plans may produce more ears, those on the one stalk will be larger, equal in quantity and better in the quality of the corn.

Having settled the preference for one stalk in the hill, the *Distance* remains to be given.

I should advise the checking to be four and a half feet one way, by three and a half the other. I should then expect to make the crop, after this preparation, with three plowings—the first to be given the narrow way of the rows, and the two last the wide way. The crop is now planted, and a very important branch of the work is disposed of.

The Mode of Culture remains to be told. I will preface that part of my essay with this re-

mark: that however much other things may admit of delay and neglect, that the corn never recovers from injury of this sort. It requires to be worked early, rapidly, and to be disposed of soon. As soon as the third and fourth blades have made their appearance, let the operation be commenced. The plow running next to the young plant should be narrow and long, so that the earth may be broken very deep and close to the young corn, and yet it is not covered. The best plow in common use, for that purpose, is the scooter or colter. The latter, in lands that are at all tenacious or close, is decidedly preferable. If this operation is as complete as it should be, all the earth about the roots of the plant will be loosened; and when the middle of the row shall have been also broken deep and close, the young roots, which soon shoot out in great numbers, in search of food, will easily penetrate the soft earth and find their appropriate supplies, and impart health and vigor to the young stalk. The hoes should follow the plows in this operation, perfecting the work by thinning to one stalk, and giving the hill a nice dressing, leaving it perfectly clean, and returning a little more earth to the root of the corn. In about twenty days, or three weeks, the working should be repeated. If the plow work has been very thorough at the first operation, it need not now be quite so deep or close as before, but nearly so, using some plow next the corn which will tumble the soft earth about the roots, covering all small grass, and saving much labor to the hoe hands.

At this time, the hoes should pass over again, thinning out all surplus stalks, pulling off suckers, straightening the bent stalks, and making clean all which the plows may have failed to do. In three weeks more the third and last working should be given. This is an important crisis, and much must be committed to the judgment of the operator. No work requires the exercise of a sounder discretion than that to be given to corn, in this advanced stage and hot season. Ordinarily the work should be much more shallow and less close than the former workings, using some plow which should not penetrate deep, but which would leave the surface as soft and smooth as possible. To make the corn perfect, the hoes should pass over again, and make all complete and clean. But if ample justice had been done in the former workings, not much will remain now for the hoes to do. Before the commencement of this last plowing, sow broadcast with peas, about ten or twelve quarts to the acre, and the work will be complete. In every working to be given the corn, it would be greatly preferable to have the ground wet, or rather in good moist condition; but it is bad policy ever to delay these operations for more than two or three days, at most, to wait for the seasons, holding the maxim that, "He that regardeth the wind in seed time, shall not reap in harvest."

I close my treatise, by a few remarks on the *Selection of Seed Corn*.

The better plan is, to make the selections in the field, taking the largest and best filled ears and from the best bearing stalks. Much improvement may be made in this way. But even

here we may run into an error, by looking too exclusively at the number of ears, without regard to the size. It is a pretty well ascertained fact, that almost in the same proportion in which the number is increased the size of the ear is reduced. I should prefer neither the soft gourd seed, nor the hard flint corn; but a sort of medium between, combining in one the advantages of both, with a small cob and long grain. Seed from the but end of the ear are much to be preferred, rejecting about one-third, from the smaller end.

For the Farm and Home.

A VALUABLE LESSON.

THE RESULT OF HEAVY MANURING AND GOOD CULTIVATION.

Mr. Editor:—I have concluded to write you a short article for the *SOUTHERN FARM AND HOME*, in the hope that you will give it a place in your columns. I have been experimenting for the last three years on a little lot. At the beginning of my experiment there were but $4\frac{3}{4}$ acres in the lot, but I have continued to enlarge it until there are now 7 acres inside the fence.

In 1867 I manured the lot broadcast with 30 two horse wagon loads of lot manure per acre, and plowed it in with a one-horse turning shovel. About the last of January I finished plowing in the manure.

At the end of March I laid off my rows 4 feet apart and bedded with a turning shovel and planted my seed. I cultivated the cotton with a sweep entirely after sowing it the first time in the spring. August was very wet, and the weed of the cotton being large, the bolls or pods rotted dreadfully, but after all the rotting and shedding I gathered 5 bales, averaging 558 lbs. off the $4\frac{3}{4}$ acres. If the season had been favorable I would have made two heavy bales per acre.

Now for the crop of 1868. I opened a deep furrow with a long shovel and applied 30 two horse loads of lot manure per acre in the drill, and bedded on it as deep as one mule could carry the plow, planted the last of March and cultivated the cotton with the sweep. The cotton had almost every disaster to contend with that cotton is heir to—the cold spring and cut worm broke my stand, causing me to have it to replant, as the worms cut down thousands of hills. I replanted up to the 10th of June. I considered it too late after that time and quit replanting. There were many missing places—ten feet in some rows, without a stalk. Then came a long dry hot spell, causing the cotton to fire and shed, and then heavy rains, and about the first of September an army of caterpillars advanced. But after all these bad things to contend with, I gathered 540 lbs. of lint per acre.

Now for 1869. I planted the lot in corn. I laid off my rows 4 feet, and bedded deep. I continued to run one furrow in the bottom of the other between the beds, until the ground between the beds was broke 15 inches deep. In this furrow, or

ditch, I deposited 40 bushels of sound cotton seed per acre, and covered with two turning shovel furrows, and when I planted I dropped my corn 2 feet apart, breaking the ridge deep that covered the cotton seed. I covered the corn with a small scooter. I planted the 17th of February. The weather was cold and the corn lay in the ground four weeks before it came up. I should have added that I put in the cotton seed and bedded upon them the last of January.

1869 was beyond all question the driest year I ever saw. The corn stood the drought well. Notwithstanding it was very thick, (4 by 2), several competent judges looked at it and thought about the first of June that I would make 75 bushels per acre, but the drought cut it down to 35 bushels per acre. At one time it was the best corn I ever saw—many of the blades were seven inches wide. I applied 30 bushels of the seed at the second plowing between the hills by making a little hole with the hoe and covered them with the sweep when I plowed it, making 70 bushels of cotton seed per acre.

Now for 1870. I am applying 30 loads of lot manure per acre, broadcast. I intend turning it in with a No. 3 Brindly. I intend about the last of March to lay it off 4 feet and apply 600 lbs. of Wilcox and Gibbs Manipulated Guano per acre, in the drill, and plant with the Dickson Seed and cultivate on his plan as near as I can. I will, if I live, let you and your readers hear from the lot of cotton occasionally through the year, if you should find my articles sufficiently interesting to give them a place in the *FARM AND HOME*. The lot originally was poor pine land, but lies level and has a stiff red clay subsoil. I have been offered fifty dollars per acre rent for it this year and refused it. I am a strong believer in guano and shall use twenty three tons on 230 acres of cotton. I will close my badly written letter, by hoping that you, Mr. Editor, will get as many subscribers for your *FARM AND HOME* as you desire. Very respectfully,

B. M. BATEMAN.

Near Byron, Houston co., Ga., Feb. 11, 1870

NOTE BY THE EDITOR.—We publish Mr. Bateman's interesting letter with great pleasure. Communications such as his, containing practical information, the result of actual experiment, are very valuable, and are always welcome to us. We hope that he will not forget his promise to let us hear from his lot during this year.

JOSH BILLINGS says: "Any business firm that hasn't got sand enough in its craw to expend a few dollars in making its business known to three or four thousand people, ought to pack up and go peddling peanuts."

THE MOST efficient aid to agricultural advancement is the dissemination of agricultural newspapers and books, the increase of schools, workshops, grist and saw-mills, manufactories and railroad facilities.



Horticultural Department.

THE VEGETABLE GARDEN.

We take it for granted that the ground has been well prepared by deep spading or plowing, and heavy manuring, that the beds are all neatly trimmed and the walks cleaned, and that every thing is ready for sowing the seed. In some favored latitudes a considerable portion of the vegetable crop is, or may have been, already planted, but generally throughout Georgia this is the month for planting the main crop of the garden.

ASPARAGUS.

Work over the Asparagus bed lightly with a spade fork, working in some thoroughly rotted stable manure, and then top dressing with some fine, rich compost. Great care should be taken in the use of the fork, as the young buds are now beginning to start.

BETTS.

Lay off the drills, fifteen inches apart and about an inch deep. Drop the seed, which should be soaked for thirty six hours before planting, from four to five inches apart in the drill, then cover and press the earth over the seed with a board or the back of a spade. When the plants are three inches high thin them to about twelve inches apart in the row. The Early Blood Turnip, The Early Bassano, and Long Blood Beet, are excellent varieties.

CABBAGE.

Early Cabbage may be sown very thinly in drills from eighteen inches to two feet apart. When the plants are up, thin them to eighteen inches or two feet apart in the drill. They will make good heads without being transplanted. The Early York, Early Winningstadt, Early Wakefield and Early Schweinfurth are most highly recommended. The Early York is small in size, but tender and very early. The Winningstadt is excellent for summer use, is sugar loaf in form, heads well, and is tender. The Wakefield is a great favorite and is as early as the York, and the Schweinfurth is a new

variety, of unusually large size, much esteemed for summer and fall use.

CAULIFLOWERS

Require the same culture and treatment as cabbages. If sown now in an open border of deep, rich soil, good Cauliflowers can be grown, notwithstanding the *dictum* that this delicious vegetable "cannot be raised at the South." The Erfurt Earliest Dwarf, Early Paris, and the Large Early White are good sorts.

SWEET CORN

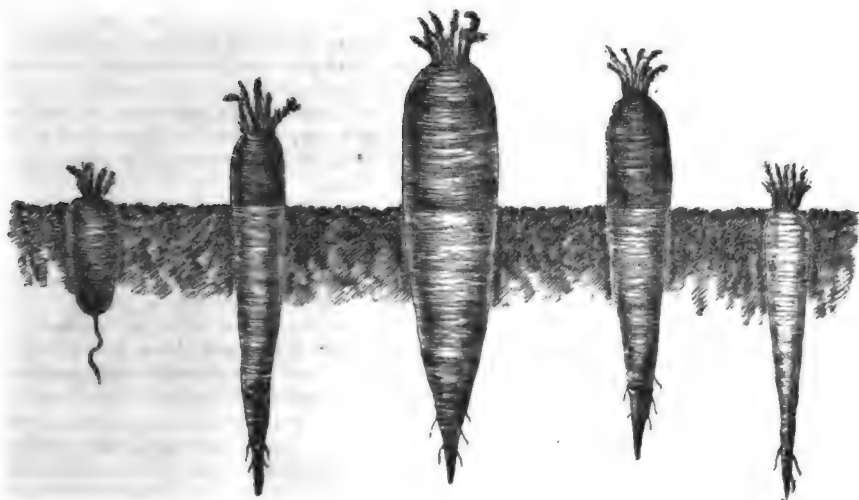
Should be planted now and at intervals of two or three weeks, until the middle of July. Adams' Extra Early, Russell's Prolific and Crosby's Early, are the best kinds for the first planting. Stowell's Evergreen is also a very good variety, but it is later than those already named. Where there is danger of frost, if you would have early "roasting ears" it would be well to provide protection for the hills. A short plank, supported by two bricks, so as to raise just above the plant will answer the purpose.

LETTUCE

Should be sown very thinly in a shallow drill. Cover lightly and press the earth over the seed. There are two sorts of Lettuce, the Cabbage with round head and spreading leaves, and the Cos Lettuce, with long, straight head and narrow leaves. The Malta Drumhead, All The Year Young, Mammoth Cabbage, and White Silesian, of the Cabbage sort, and the Golden Cos, Paris White Cos, and Carter's White Giant of the Cos sort are most esteemed.

CARROTS.

Now is the time to sow carrots in drills from a half to three quarters of an inch deep and one foot apart. Drop the seed in the drills at intervals of three or four inches and cover lightly. Besides being a delicious vegetable for the table, carrots are also nutritious food for stock, and if farmers would plant a good sized patch of them they could save a considerable amount of corn. The Early French Short Horn, Altringham, White Belgium, Yellow Belgium and Long Orange, an engraving of which is annexed, are the most esteemed sorts for table and farm use.



For the table the Early French Short Horn is preferable, and for stock the White and Yellow Belgium, are considered to be the best.

ONIONS.

It is not too late yet to sow onions. Soak the seed for forty eight hours and drop at intervals of three or four inches in shallow drills, twelve or fifteen inches apart. Cover and press the earth over the seed. Buttons and sets may yet be planted. Leeks, which are of the onion family, may now be sown and treated exactly like onions. The best, surest, and most easily kept onions are the

Large Red, Large Yellow, Wethersfield Red, Yellow Danvers, Silver Skinned and Large Round Madeira, an engraving of which is annexed.

MUSTARD

Should be sown in drills quite thickly for salad. If it is sown for seed, sow in drills a foot apart and thin the plants to six inches apart in the drills.

PARSLEY

May be sown in drills, or on borders where it makes a nice edging. The seed germinates very slowly and therefore should be soaked in hot water for twenty four hours before sowing.



LARGE RED.



LARGE YELLOW.



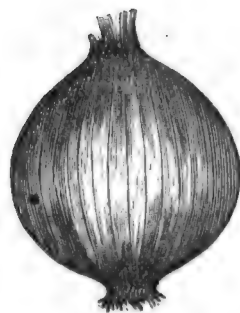
WETHERSFIELD RED.



YELLOW DANVERS.



SILVER-SKINNED.



LARGE ROUND MADEIRA.

ENGLISH PEAS

Should continue to be sown at intervals of fourteen days. For choicest varieties see January Number.

PARSNEPS

Should be planted exactly as is directed for carrots. They are also an excellent food for stock. The Sugar, Long Hollow Crown, and Student are the best, both for table and farm use.

SALSIFY.

Plant the same as carrots and parsneps.

A few snap beans may now be planted, but

provision should be made to protect them with boards or other covering, against cold nights and mornings.

Tomatoes Peppers and Egg Plants, may be sown in a hot bed.

POTATOES.

If Irish potatoes have not been already planted do so immediately, and if sweet potatoes have not been bedded for slips, let this also be done without delay.

SWEET HERBS.

This is the time to sow sweet herbs, such a

Thyme and Sage, and at the close of the month Sweet Basil and Summer Savory.

If you wish to have a few very early melons, squashes and cucumbers, you can do so by planting in small baskets made of whiteoak splits, with wide meshes, filled with rich mould, and buried to the rim in the hot bed. When all danger of frost is past these baskets can be removed to the open ground and will grow without check from the transplanting.

On those days when the weather will not permit work in the gardens it will save time to collect and prepare brush for peas, poles for beans, and the supports for tomatoes.

THE ORCHARD.

A good deal of useful work has now to be done in the orchard. The soil should be removed round the fruit trees, and manure forked in round them, care being taken not to disturb the roots. All dead wood should be cut away. Peach, Plum and other stone fruit trees may be pruned with advantage, after the shoots have started, and even after they are in blossom. The pruning makes them blossom later and thus lessens the danger from April frosts. Search again for the peach and apple borer. Wherever you see any indications of his presence hunt until you find him and when found you know what to do with him.

This is a good season for grafting. The apple and pear, and even the peach and plum may be grafted into seedling roots, but it is rather late for stone fruits. Insert the graft just below the surface of the soil. No wax or clay is needed. The scion ought to have about four buds, one of which should be on the end. Old trees may be grafted on their limbs, covering the incision with grafting clay. Trees properly grafted will bear fruit in two years.

If you still have fruit trees to plant do so at once. This is a good season for planting the fig. Seeds of the apple and pear may be sown during the early part of the month.

The Flower Garden.

Having completed the preparation of the soil, apply good rich compost bountifully without any regard to the number of hills of cotton or corn it would manure, having trimmed the edgings, dressed the walks, adding fresh sand where they need it, and having given the grass plots a good coating of compost mixed with a little guano, you may set out your bedding plants, such as the Verbena, sow all hardy annuals, biennials and perennials, plant Dahlias, Peonias, Tuberoses, and all the summer blooming bulbs.

In sowing flower seeds take care not to sow them too deep. When they fail, nine times out of ten, it is because they have been covered too deeply with coarse clay soil, forming a hard crust over them which they are too weak to penetrate. See that the soil is perfectly pulverized and the surface per-

fectly smooth. Sow the seeds thinly and cover with fine mould mixed with sand, by sifting it over them through a sieve, to a depth of a sixth of an inch. Mark with labels to distinguish the different flowers. Small stakes smoothed on one side, painted white, with the names marked on them with a lead pencil, answer the purpose, and are easily made.

For the Southern Farm and Home.

Laying out a Flower Garden.

Prepared from the unpublished Manuscripts

OF THE LATE WM. N. WHITE.

(Continued from February Number.)

The Rosary is that part of the flower garden to which most attention should be paid. A distinct and elegant garden of roses is the most interesting addition that can be made to the pleasure grounds.

There are so many desirable varieties, that they may well demand a separate department. Earth has no rival to the beauty of the rose; blooming more or less freely eleven months, and sometimes the entire year, delightful in fragrance, perfect in form, and of the loveliest hues. Merely as an evergreen plant many of them are worthy of culture, and the loveliest of all hedges are formed of the evergreen varieties. It is fortunate for those who have little time to devote to them, that the loveliest flowers in the world are the easiest cultivated: Tea, Bourbon, Noisette, and Bengal. I name these in the order that I prefer. In a small collection they give the greatest satisfaction for the time and pains bestowed on them. Tea roses, in the estimation of Downing, were the loveliest and most delicious flowers in the world.

Rosaries are usually laid out in geometrical style. To produce the best effect small beds of these, four or five feet in diameter, surrounded with turf, should be planted with a single rose. The branches should be pruned and fastened to the ground with small forked pegs, so that the entire surface of the soil shall be covered with foliage and bloom. The beds may be made of the smaller size at first, and enlarged as the bush requires. The soil should be yearly enriched; no soil was ever made too rich for roses.

Where the Rosary is intended to be large, it should be divided into two compartments; one for the summer kinds exclusively, the other to contain the autumnal varieties. The beds are most pleasing when surrounded by grass with suitable gravel walks. The contrast of red and green, always pleasing, is seen in its perfection in the rose, and the grass gives a finish to the Rosary, and a freshness and brilliancy to the flowers that cannot be too much admired. In planting roses on lawns, one evil should be carefully avoided; that of placing the turf close up to, and around the stems immediately after planting. Roses thus treated have a sickly appearance, and no wonder, for the rain and air cannot reach the roots if they have first to pass through the turf, and give sustenance to the blades composing it.

The Rosary should be where it can be enjoyed from the best and most frequented rooms of the house, or if at a distance it is well to have a raised mound in its vicinity. The sides may be planted with roses, and on the summit, an arbor covered with climbing roses might be placed, from which in the flowering season, a bird's-eye view of the whole Rosary could be obtained.

The winter garden is another department of the flower department of the flower garden second only to the Rosary in attraction. Here may be carefully arranged in a distinct locality, as great a variety of the evergreen plants, hardy enough to endure the climate, as can be conveniently obtained. Evergreens should be scattered in other departments of the flower garden, but there should be more in this than in any other portion of the grounds. The ground work of the winter garden is generally grass, though for evergreens this is not so necessary as for the Rosary or flower garden. If a sunny place is chosen, and the sides surrounded by a screen of evergreen roses, hollies, etc., and interspersed with beds of crocuses, daffodils, and other early bulbs, then a summer scene is given in the heart of winter. A beautiful flower for this garden is the *Calycaanthus Precox*, or "scented allspice," which blooms in the middle of winter, and is so fragrant that a single blossom will perfume a whole room. Not less than one third of the trees and shrubs about our dwellings should be evergreen.

In the mixed flower garden the foregoing departments are not kept distinct but the inmates of the Rosary, the winter garden, and other classes of flowers and shrubs are mingled in agreeable variety. Fountains, arbors, vases and other artistic decorations may be added. When laid out in superior style it is a very effective arrangement; taking all seasons into consideration, it should be the most highly ornamented scene connected with the dwelling. The flowers and shrubs should be so arranged that while certain grouped beds are filled with annuals, roses, etc., they should be so placed as not to detract from the general effect of the scene, when the plants are small or in a state of decay.

Grass is the proper ground-work of such gardens. The dry surface of beds formed on a grass plat ought to be decidedly under the surface of the ground, or decidedly above its level, in order to increase the expression of art, and to exclude the idea that merely a portion of the turf had been dug in to be planted with flowers. These outlines should be formed with concealed brick-work, as if of merely raised earth they will be apt to be put out of shape when the bed is dug over. When the beds are lowered beneath the surface they should be planted with species requiring more than an ordinary supply of moisture. If the border of a bed on a grass plat be of box it should be made so broad as to form an effective contrast between its own color and that of the surrounding grass. In choosing plants for a border it should be an object

to have as near as may be an equal number of plants in bloom every month in the year.

Plants placed near each other should not be very different in size and habit of growth, lest the ensemble should appear inharmonious, and the stronger choke out and overpower the other. If the beds are seen on all sides, place the tall growing plants in the centre, or if a border, place the lowest growing plants next to the walk, and the others behind them, the tallest forming the last row.

As the prevailing color in garden scenery is green in all its varied shades and mixtures, as seen in the grass of the lawn and the leaves of the shrubs, so the prevailing color in beds should be red in all its shades and mixtures, next to red, yellow and orange should prevail as contrasting happily with the blue of the sky. Mr. Loudon states, "that he had observed that flower gardens looked best when the flowers were so arranged as to have a compound color next the simple one which was contained in it. Thus, as there are only three simple colors—blue, red and yellow—he advises that purple flowers, which are composed of blue and red, should have yellow next them; that orange flowers, which are composed of red and yellow, should be contrasted with blue; and that green flowers, which are composed of blue and yellow, should be relieved by red."

Household Department.

DOMESTIC RECEIPTS.

BY MISS F. A. M.

Mr. Editor:—In these days when economy in house keeping is most desirable, I send you a few inexpensive recipes.

OMELETTE.—Take a half pint of grits (or hominy) boil it well, and while warm stir in a tablespoonful of butter, and season well with salt and pepper. Set this aside, till about an hour before dinner, then beat two eggs thoroughly, and add them to the hominy, with just milk enough to make a stiff batter. Stir all together, and bake in a moderate oven. Cold hominy from breakfast can be used in the same manner, warming it over.

MANIOCA PUDDING.—Three tablespoonfuls of Manioca, one quart of milk, a little salt, one small tablespoonful of butter, and three eggs. Take half the milk cold, mix with the Manioca, add the butter, and stir on the fire till it boils or thickens. Pour this quickly into your baking dish, stir in the remaining milk, sweeten to your taste, and when cool, add the eggs (well beaten) and flavor with nutmeg, lemon or vanilla. This recipe is found on the packages. I give it to call attention to the article, preferring it to Arrowroot or Tapioca.

GOOD PLAIN FRUIT CAKE.—One pound flour, one pound sugar, one pound raisins prepared, three quarters pound of butter, four eggs, a cup of butter-milk, and a teaspoonful of saleratus or soda. If you

have not buttermilk use yeast powders (Price's are the best) and omit the soda. Beat the eggs together well, and mix in all the other ingredients as for pound cake, add spice to your taste, and bake slowly.

LIGHT GINGERBREAD.—Three quarters pound of butter, half pound of sugar, half dozen eggs, one pint of molasses, half tablespoonful of ginger, four cups of flour, a little pearl-ash, mix, and beat well. Bake as pound cake.

SODA BREAKFAST CAKES.—One pint of flour with a teaspoonful of soda sifted into it, one pint of sweet milk, two eggs—beat this batter well, and immediately before baking, add an even teaspoonful of tartaric acid dissolved in water. Bake quickly.

For the Southern Farm and Home.

Domestic Receipts.

BY MRS. WM. N. WHITE.

DIRECTIONS FOR MAKING PUDDINGS.—An earthen bowl, or a tin form, or tin bucket can be used for boiling puddings, but many think they are lighter boiled in a thick cloth or bag, made for the purpose. The bag should be made of linen drilling, in the form of a cone, sewed very tightly on one side, and then turn and sewed up on the other, to secure the pudding from the water. When used put the seam on the outside, dip the bag into hot water, wring, and dredge with flour. Sometimes the pudding swells so as to press the string with which the bag is tied over the hem at the top, and the pudding escapes into the water; to prevent this make five or six eyelet holes in the bag below the hem, through these pass a nail, tie the string below the nail, which makes it very secure. Great care should be taken that the bags be thoroughly washed in clean water, without soap, and well dried, otherwise, they will give a musty taste to the puddings that are next boiled in them. In making batter puddings put in but a small portion of the milk at first, as it will be difficult to stir out the little lumps if the whole quantity is mixed together at once. After the flour is stirred smooth in a part of the milk, add the eggs not beaten and beat the mixture well, then add the remainder of the milk and stir all together till equally mixed. A boiled batter pudding is much lighter when the materials are all beaten together, than if the eggs are done separately. If berries are used put them in last, and it will require at least one third more flour than without fruit. Pour into the bag, leaving room for the pudding to swell, and tie firmly, place it at once in a pot of boiling water, turn a plate in at the bottom of the pot, and see that the pudding is covered with the boiling water, and don't let the water stop boiling one second; if it does, the pudding will be watery. Keep the teakettle boiling to replenish the water in the pot as it wastes away. During the first half hour turn it several times to prevent the fruit settling on one side. When done dip it into a pan of cold water, turn it out, and serve at once. Very good puddings

may be made without eggs, but they must have a little milk as will mix, and require longer boiling. A spoonful or two of yeast, or soda and cream tartar, will answer instead of eggs.

A boiled corn meal pudding requires more room to swell, and are better to be cooked four or five hours. A flour pudding will cook in two hours.

Care should be taken to have all of the materials of the best quality. It is well to break each egg separately in a cup, lest the pudding be spoiled by a single bad one. A very little salt is an improvement, as it removes the insipidity, and brings out the full flavor of the other ingredients, but do not use enough to taste perceptibly. Where cream is used put it in just before the mixture is ready, as much beating will decompose it. Boiling milk adds to its richness, but eggs should not be added to hot milk, as they will poach. A baked pudding must be served in the dish it is baked to, and to improve the appearance, small fruits can be arranged around the side of the dish. Batter, or custard puddings require a quick oven; bread, corn meal, or rice, a moderate one. Eggs for baked puddings should be beat separately and very light, for batter puddings the milk should be boiled, and the flour with a little of the cold milk, mixed to a smooth paste, then pour the boiling milk over it, stir it all together and let it cool before the eggs are added. All light puddings require a quick oven, and they should be served the moment they are done, as if they become partly cool they fall, and are heavy.

CUSTARD PUDDING.—One quart milk, four eggs and four even spoonfuls of flour, one cup of sugar; take enough of the milk to wet the flour, boil the rest of the milk, and pour boiling hot on to the flour, mix it smooth, and when partly cool, add the eggs beaten to a froth, bake in a quick oven thirty minutes, or until it is not milky. Flavor with nutmeg, or lemon.

PLAIN BREAD PUDDING.—Into a quart of boiled milk put a cup of light bread crumbs; when cool, add three eggs, three spoonfuls of sugar, three of butter, and any spice preferred. Bake an hour, eat with cold cream sauce.

APPLE CUSTARD.—Pare and core six large mel-low apples, tart ones are best, stew them in a little water till soft, turn them into a pudding dish and sprinkle over them a half cup of sugar, beat eight eggs very light, adding to them a cup of sugar, with three pints of milk, grate in half a nutmeg and turn the whole over the apples. Bake in a quick oven until it is not milky.

MARLBOROUGH TARTS.—Pare, core, and stew very tender, juicy tart apples, when soft pass the pulp through the sieve, to a teacup of the apple put the same measure of sugar, the same of wine, and a half teacup of butter, the juice and grated rind of a lemon, a pint of milk or cream, five eggs made very light, spice to the taste. Mix all of the ingredients well together and turn into deep pie plates that are lined with rich pastry, notch the edges prettily, and bake half an hour.

The Southern Farm and Home.

MACON, GA., MARCH, 1870.

J. W. BURKE & CO., - - - Publishers.
WM. M. BROWNE, - - - Editor

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PERSONS sending orders for articles advertised in our Magazine, are respectfully requested to state in their order that they saw the advertisement in the FARM AND HOME.

WE REQUEST subscribers not to send us local bills not current in Macon, or torn currency which we cannot use. Remit by Postoffice order, Registered letter or by Express.

TO ADVERTISERS.—We beg leave to request persons who favor us with advertisements for the FARM AND HOME to send them so that they will reach us on or before the 15th of every month.

WE AGAIN gratefully acknowledge the receipt of valuable documents from the Agricultural Department at Washington, D. C., through the courtesy of Hon. Horace Capron, Commissioner.

IT IS OUR PURPOSE, in future, to issue the FARM AND HOME on the 1st instead of the 15th of each month, believing that the change will be more satisfactory to our subscribers than the arrangement which has hitherto existed.

GEORGIA ACADEMY FOR THE BLIND.—We are indebted to the courteous attention of Mr. W. D. WILLIAMS, Principal of this most benevolent institution, for a copy of the Eighteenth Annual Report.

It is gratifying to learn from its plain, practical statement, that the progress of the Academy has been successful, and that its prospects are encouraging. Too much praise cannot be given to Mr. Williams and his assistants, for the devotion, patience and intelligent industry with which they manage the Institution.

PARTIES who send us letters or circulars, inclosing advertisements, if they wish them inserted, would do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we now have, are liberal enough.

LET US HEAR FROM YOU.—We wish our planting friends would adopt the good advice given them in this number by "A Young Farmer from Bibb Co.," and would send us short, practical letters like that from Mr. Bateman of Houston Co. They need have no fears on the ground of style or spelling. We promise to "fix" all that. We wish them to talk to the readers of the FARM AND HOME just as they do to their neighbors, whenever they have anything useful to tell. As the "Young Farmer" says, "it is not high sounding words or well rounded sentences that always convey the best ideas."

WE ARE deeply indebted to our friends and the public for the liberal patronage which has been extended to the SOUTHERN FARM AND HOME since its establishment a little more than four months ago. We have endeavored assiduously to show our appreciation of this generous support by sparing no expense of time or money to make our Magazine more and more worthy of popular favor. We intend to persevere in this course and in return would suggest to our subscribers a way in which, with very little trouble to themselves, they could materially help us in our work. *Let each of them procure us the name of one subscriber.*

AGRICULTURAL SOCIETIES AND FAIRS.—We sincerely rejoice to see that the enterprising citizens of Augusta have formed an Agricultural Association, and that they have subscribed all the money necessary to hold a fair in their beautiful city next fall. This is activity, this is the right sort of enterprise, this is the "interest in agriculture" which we like to see. It is not forming an Agricultural Society with a President, Secretary and Treasurer, who never have any meetings to preside over, any proceedings to record or any funds to collect, like those of other "Agricultural Societies" of which we know something.

We are glad too to see that the Putnam

County Fair Association is working well and zealously, and is striving to induce the good people of several adjoining counties in Middle Georgia to cooperate with them in their good work.

Most cordially do we wish God speed to both Associations. They will do real good to the people. Every Agricultural Society that is formed *for the purpose of work*, does vast good. It is invariably the forerunner of two horse and subsoil plows, fertilizers, big crops, and general improvement.

If we remember aright, the citizens of Augusta subscribed in one day the \$10,000 which were required to carry out the object of the association.

The following are the officers of the Society: President, Wm. H. Tutt. First Vice President, R. Y. Harriss. Board of Managers, P. K. Berkman, T. H. Nelson, T. P. Stovall, C. A. Platt, E. H. Rogers, G. A. Oates, A. R. Wright, W. H. Warren, T. S. Beckwith. Secretary, E. H. Gray. Treasurers, J. J. Cohen & Sons.

MEMORIAL OF GEN. HOWELL COBB.—We are indebted to the Reverend Samuel Boykin, the editor, for a copy of this beautiful volume, which we have read with intense interest and gratification. It is a touching and eloquent heartoffering to a great and good man by those who knew him best, and is indeed a "memorial" which surpasses in beauty and enduring value any monument in brass or marble which could have been reared over his grave.

The book is not a mere eulogy pronounced by partial friendship. It is the appreciation of the life and services of a prominent citizen by many persons with whom he was intimately associated in the national councils, at the bar, in the army and in private life, and it contains a deep moral lesson which we can all study with advantage, especially those young men who are about entering on the active battle of life. We heard a distinguished divine say to-day, that he had sent a copy of the book to his son who is now in college, and that he thought it was the most valuable work of its class for young men that he had ever seen.

We trust that the "memorial" will reach every fireside, and that the record which it contains of the talents, patriotism, virtues,

and character of the great Georgian, will stimulate those who survive him to profit by the example which he has left them.

PREMIUMS.

The Publishers of the **FARM AND HOME** will give a premium of Fifty Dollars in money or books, selected from their catalogue, to the writer of the best tale of Agricultural and Rural Life, and a similar premium of Fifty Dollars in money or books to the writer of the best poem, on the same subject.

The articles will be judged by a committee of three disinterested and competent persons in Macon, on the 15th of April, 1870, who will award the prizes. All the compositions which are intended to compete for the premiums must be sent in sealed envelopes, together with the names of the author, to the Editor of the **FARM AND HOME**, on or before the 31st of May, 1870.

All contributions so sent will be regarded as the property of the publishers.

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As a reward to those who take the trouble to get up clubs of subscribers to the **FARM AND HOME** in their neighborhoods, and as an encouragement to others to engage in the enterprise, the Publishers have agreed to offer the following liberal premiums:

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To any person sending us Three Subscribers and Six Dollars, we will send any one of Bulwer's, Scott's or Dickens' Novels, or any other book in our Catalogue, worth \$1 50.

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To any person sending Fifteen Subscribers and Thirty Dollars, one or more Chromos, worth \$15 00, or books to that amount.

To any person sending Thirty Subscribers and Sixty Dollars, Books of the value of \$35 00.

To any person sending Seventy-five Subscribers and One Hundred and Fifty Dollars, a Parlor Organ, or a Sewing Machine, worth \$60 00.

To any person sending One Hundred and Fifty Subscribers and Three Hundred Dollars, an Organ worth \$130, or a Library, selected from our Catalogue, worth \$150 00.

Our Catalogue includes all the best Standard Books, Agricultural, Historical, Miscellaneous and Juvenile, Bibles, Hymn and Prayer Books, in all styles of binding, Photograph Albums, etc., etc. This Catalogue will be sent, postage free, on application to the Publishers.

TO CORRESPONDENTS.—All communications and articles intended for publication in the **FARM AND HOME**, as well as all inquiries to be answered in these columns, should be addressed to WILLIAM M. BROWNE, Editor SOUTHERN FARM AND HOME, Macon, Ga., so as to reach him as nearly as possible on the first of every month.

Letters enclosing money for subscriptions and advertisements or relating to business matters, should be addressed to J. W. BURRE & Co., Publishers, Macon, Ga.

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Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are liberal enough.

The Rural New Yorker and the South.

In a recent number of an agricultural periodical published in New York,—Moore's *Rural New Yorker*—we found an article under the head, "Shall we go South," which equals in malice, sectional hate, and unscrupulous vindictiveness anything that we have ever read in the columns of Theodore Tilton's *Independent*, either of Forney's "two papers, both daily," or any of the dirty radical sheets which adventurous loyalists have issued in the Southern States in order "to get a share of the public printing."

Had the article appeared in what is called a political journal in the interest of the radical party, we should not have noticed it. We are so accustomed to the regular slander-mills that we no longer pay any attention to their noise, dirt or the poisonous food which they grind. But the *Rural New Yorker* professes to be "devoted to agriculture, horticulture and rural life"—to have nothing to do with politics,—and when it gives up columns of its space to wilful, deliberate slanders of the people of the South, we notice the fact, not because we care one straw what the editor of the *Rural New Yorker*, after "a hurried trip South," thinks about our people, but to show how Northern periodicals, whose interest it would seem to be to tell the truth and shame the devils by whom they are surrounded, step out of their appropriate sphere, ignore the avowed objects of their existence, and in order to gratify their hatred, malice and all uncharitableness towards the South, publish columns full of slanders with a perfect knowledge that every statement they contain is a deliberate falsehood.

Some imaginary correspondent of the *Rural New Yorker* asks the editor, "Shall we go South?" and thereupon the editor who had just made a "hurried trip South," and had "improved his opportunities for acquiring information with a view to answering the question—'Shall we go South?'" replies as follows:

"We would not remove our family to any locality where the fact that its members came from the North would result in social ostracism; nor would we rear a family where the holding or expressing of any political or religious opinion, or the belonging to a certain sect or party, would affect our social relations; nor where the flag of our common

country is hated, scoffed at, and where men refuse to recognize its authority except so far as that authority is backed up by force; nor would we remove our family from a locality where there is a good, liberal system of education established to one where there is none.

"Therefore we do not advise Northern men with families to migrate to the localities in the South where these objectionable conditions exist. That they do exist, in a great many localities, we have abundant evidence—evidence which would deter us from migrating thereto, had we such intention."

We may rejoice that the writer of the above has resolved definitely not to remove his family to the South, but we deny emphatically that Northern families are socially ostracised in any locality at the South because "they came from the North." There are numbers of Northern men now living in Georgia, who have not only been well received and kindly treated, but have been the recipients of honor and distinction at the hands of the people. We appeal from the judgment of the editor of the *Rural New Yorker*, to Mr. B. T. True, of Morgan county, Ga., a Northern man, a Union soldier, one of Sherman's army of invasion, now a member of the Executive Committee of the State Agricultural Society, and ask him to say whether "Northern men are ostracised because they came from the North."

The charge that religious intolerance exists at the South is so stupid a falsehood that it scarcely merits any notice. A member of a Free-love association, a Fourierite, or an associate of some Agapemone, would very probably find himself socially ostracised, just as women of ill-fame would find themselves excluded from respectable society; but no Northern man of good morals and decent habits who comes South will experience the slightest social inconvenience on account of his religious opinions.

Nor is it true that "the flag of our common country is hated and scoffed at." So long as it is only unfurled to enforce obedience to acts of arbitrary violence and oppression; so long as its presence only reminds us of our prostrate condition, humiliation and exclusion from all participation in the benefits of "our common country," it is not unnatural that it should not evoke

that enthusiasm which patriots feel at the sight of their national flag.

In the last place, the editor of the *Rural New Yorker* would not move to a country where there is no system of education. Until he made the discovery that the South had no system of education, we were rather inclined to boast that our people were as well educated, as cultivated and refined as any other people on the globe, and that our schools, colleges and universities were institutions of unsurpassed excellence. And we think so still, notwithstanding the advice of the *Rural New Yorker*, whose misstatement in this regard is probably attributable to the fact that during his "hurried trip South," his social relations were confined to that class of newly made citizens to whom the Southern people have never attributed very pure religious belief, a high order of social refinement, or educational excellence.

If any Northern man ask us "Shall we go South?" we should answer: If you come to settle among us and identify your interests with ours; if you treat us with the same civility which you expect us to extend to you; if you do not assume to belong to a superior order of human beings, of superior civilization, morals and religion, and do not insist upon our adopting your views, habits, and mode of thought—in a word, if you mind your own business and allow us to mind ours,—we promise you that you will be well and kindly received, that you can hold any political opinions you choose, that nobody will interfere with your religious convictions, that you will have ample opportunity to educate your families, and that you may hoist the flag of our common country on your house, without being hated or "scoffed at." But if you come to preach the doctrine of radicalism and social equality,—if you come to make us believe and admit that you are our superiors in morals, religion, education, intellect, refinement, manners and politics, we strenuously advise you to stay at home and enjoy the society of the editor of the *Rural New Yorker*.

WE ARE unavoidably obliged to defer the publication of several very interesting and valuable communications from esteemed contributors already in type, but crowded out for want of space.

Literary Department.



EDITOR'S BOOK TABLE.

Four Oaks, a novel by Kamba Thorpe (Carleton), for sale by J. W. Burke & Co., Macon, is a very readable tale of every day life in an American village, whose characters are all commonplace, but true to nature. The story never rises to the level of the sensational, although it never sinks to the absolutely stupid. It has the defect of Chinese paintings. It often sacrifices general effect to a too minute delineation of unimportant points, and the descriptive parts are sometimes slightly prosy. But on the whole it has real merit. The character of the heroine, Miss Harry Vane, and that of a sour-tempered old maid who has not given up all hope—Miss Edna Poinsett—are well conceived and well drawn.

It is well and clearly printed in the peculiar type of Carleton's publishing house, on paper not over good, and the form of the volume is too fat and dumpy for comfort.

Westbrook Parsonage, by Harriet M. Keever, author of "Silver Threads," etc., (Claxton, Remsen and Haffelfinger, Philadelphia, for sale by J. W. Burke & Co.,) belongs to that class of books known as "religious novels," and its design is to show the fatal consequences to which the "Ritualism, attractive music, sensuous display and formalism" in the sermons of the Episcopal church must inevitably lead. The purpose of the book is evidently good. The author's convictions are sincere, and she manifestly feels the danger which she aims to expose. But like most religious controversialists she lacks charity in dealing with those whose errors she combats, and indulges in a severity and harshness of expression which may anger but never can convince a single ritualist who may read her book. We heartily agree with

her in her condemnation of "ritualism" and "formalism," with their auricular confessions, and sin-absolving priesthood. We dislike as much as she does the "intoned" prayers, and believe with her that the doctrines of Newman and Pusey and their school of theologians, are most dangerously heretical, but "intoning" is not necessarily "mumbling that none can understand," nor is every minister who leans to ritualism "an arrogant priest." *Westbrook Parsonage* is, however, a good book and can be read with profit. It is ably written, with deep earnest feeling, and with the sincere desire to promote the cause of what Miss McKeever believes to be "Protestant Truth."

The Complete Edition of Tennyson's Poems, with numerous illustrations, (Harper & Brothers, for sale by J. W. Burke & Co.,) is a beautiful book,—beautiful, because it contains the beautiful thoughts of the poet of the age in which we live, and beautiful in form and outward appearance. It contains three portraits of the Poet-laureate, taken at different periods of his life, besides a number of well executed illustrations. Not the least recommendation of this book is its marvellous cheapness.

Medora Leigh, a History and an Autobiography, edited by Charles Mackay (Harper & Brothers,) We were in hopes that we had done with that mass of garbage, filth, and abomination of which "The Byron Controversy" is composed. A more disgusting compound was never thrust under the noses of people who affect at least to be moral, refined, and decently behaved. From the time that Mrs. Harriett Beecher Stowe's odious book appeared until the publication of that which is now before us, we almost wished that we lived in an age and country where publications of such a class were seized by a censor of public morals and given to the common hangman to be burned. They are a disgrace to literature, to civilization and to humanity, as obscene and degrading as the *Memoirs of the Marquis de Sade*, which, even in Paris, at a time when morality was not the chief characteristic of French society, was suppressed by judicial order.

We all know that Lord Byron was a vicious man, but we do not know and will not believe that he was the monster that Mrs.

Stowe would represent him. At all events the grave closed over him forty-six years ago, and whatever he may have been, he has left us "Childe Harold," "The Corsair," "The Bride of Abydos," "Manfred," and other poems which will live as classics, so long as the English language is spoken, and we do not want to have our admiration of the genius of the poet disturbed by a *post mortem* exposure of the alleged vices of the man, particularly when the exposure can answer no purpose but to gratify the greed of literary body-snatchers, and pander to the prurient tastes of demoralized scandal-loving readers. Now that Spring is coming and we can open our windows and doors, let this ordure be swept away and buried, and let us enjoy the fragrance of the violets.

We have just received from our friend, Colonel Edwin De Leon, former Consul General of the U. S. for Egypt, and well known in the editorial world as the co-laborer of Ellwood Fisher, some advanced proofs of a *Romance of Modern Egypt*,—"Askaros Kassis, the Copt"—now issuing from the press of J. B. Lippincott & Co. We regret that the sheets have reached too late to allow us to publish any part of them in this number, but we can assure our readers that they give promise of a tale of unusual interest, faithfully portraying the scenes, habits and customs of Eastern life, with which during his long residence in Egypt, Colonel De Leon became familiar, having enjoyed peculiar facilities for observation by his official position, and knowledge of the language and private life of the people. From the little we have read of "Askaros Kassis," we are led to believe that it will take rank in every library next to "Eothen," that hitherto unsurpassed tale of Eastern life.

Harper's New Monthly Magazine for February, 1870, has the following interesting and instructive table of contents: Frederick the Great—III. The Marriage of Wilhelmina and the Reconciliation; Tell Me; Beast, Bird and Fish; The Andes and the Amazon; South-coast Saunterings in England; The Consequences; Anteros, II; Flood-tide; Mirabeth; A Brave Lady; Mary Russell Mitford; Along the Wires; Paraguay and her Enemies, Map of Paraguay; A Promise is a Promise; The Game Water-Fowl of America; Walpole, or every Man has his

Price—by Lord Lytton; A Chat on Bells; Editor's Easy Chair; Editor's Literary Record; Editor's Scientific Record; Editor's Historical Record; Editor's Drawer.

We welcome to our book table, *The Plantation*, a new and valuable agricultural paper, published weekly in Atlanta, and edited by Mr. T. C. Howard and Col. H. A. Alston, late of Morgan's Cavalry Brigade. Terms, \$3 per year.

The *Southern Cultivator* still holds its own, unchanged in appearance and in the value of the information which its broad pages contain.

The *Southern Planter and Farmer*, published at Richmond, Va., at \$2 per annum, and ably edited by Messrs. C. B. Williams and J. M. Allan, is filled with interesting information. We regret to learn that Colonel Frank G. Ruffin, whom we knew well in war times, has retired from the place on the editorial staff of the *Planter and Farmer* which he filled so well. We tender our best thanks to the editors for their kindly notice of the FARM AND HOME.

We continue to receive the weekly numbers of the *Farmer and Artisan*, published at Athens and Atlanta, Ga., at \$3 a year, by M. C. Fulton & Co. It is growing in strength as in age, and both in its original and selected matter bids fair to fulfil the promises which its sponsors made in its behalf at its birth.

We have received from the publishers, Leonard Scott & Co., the last number of *Blackwood's Magazine*. In these days of radicalism, social equality, disestablishment and reconstruction, the persistent conservatism and brilliant consistency of old *Maga's* articles are very refreshing. We confess to a good deal of sympathy with its bitter aversion to "modern improvements." We commend *Blackwood* and the four great English Reviews—the *Edinburgh*, *London Quarterly*, the *North British* and the *Westminster*, all published by the Leonard Scott Publishing Co. To all who desire a knowledge of the thoughts and acts of the great writers and thinkers of our age, they are a perfect treasury of current literature.

The *American Agriculturist* for February is, as usual, first-rate in every respect. It is without exception the best and cheapest paper of its class that issues from the press.

Vol. I. No. 6.

THE
SOUTHERN

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FARM AND HOME



APRIL, 1870.
W. M. BROWNE, Editor.

PUBLISHED BY
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MACON,
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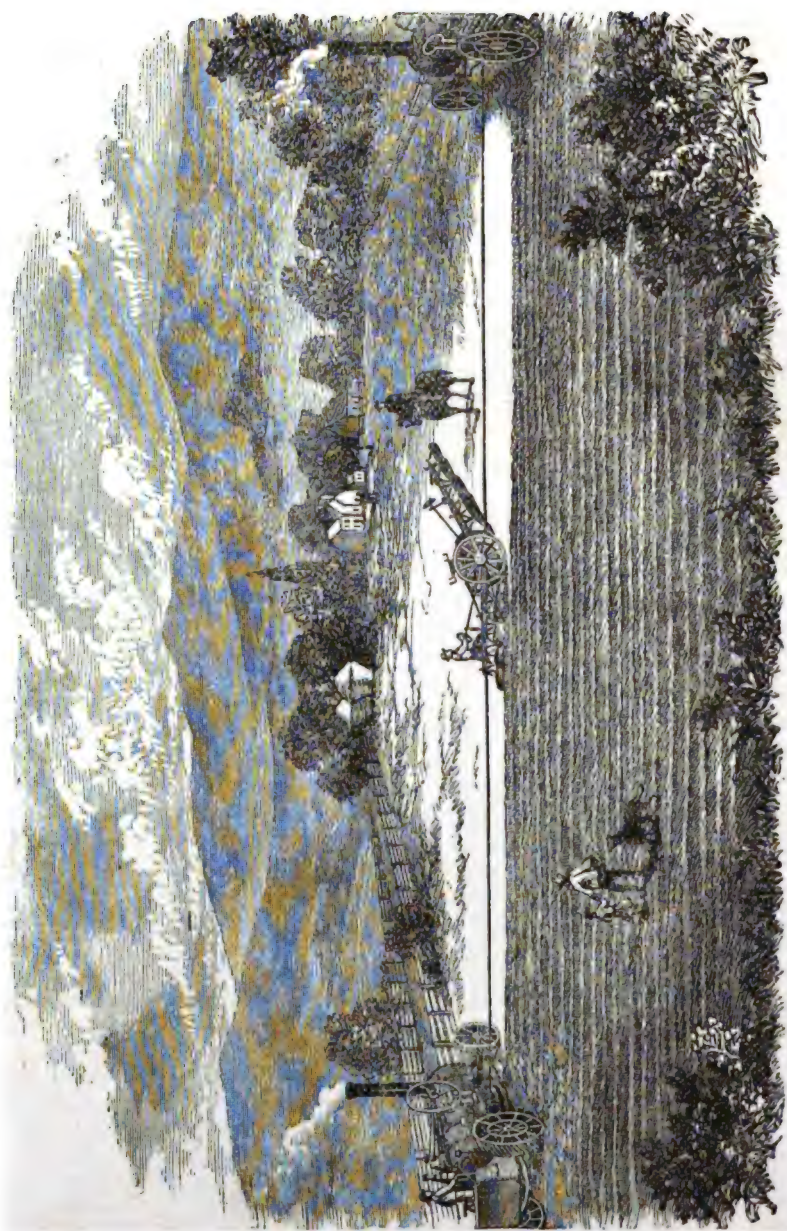


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* * THE POSTAGE on the FARM AND HOME is 3 cents a quarter; 12 cents a year.

 For Club Arrangements, Advertising Rates, and later Opinions
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SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., APRIL, 1870.

No. 6



FARM WORK FOR THE MONTH.

By the time this number reaches our readers the greater part of the corn crop will have been planted, and the preparation for cotton planting will have been completed, and a portion of the planting done. It is therefore unnecessary to repeat the advice we have already given on this subject. Those who have prepared their land well, been liberal in the application of manures, and have limited the area of their crop to their capacity to cultivate thoroughly, will find that they have acted well and wisely; while those who are opposed to "book farming," believe that deep plowing "kills the land," that "guano ain't no account," and that the old plan is the best, will, it is to be hoped, find by experience that they have erred and will resolve to mend their ways in future. We trust that there are not many to whom David Dickson has preached in vain, and on whom the crop of 27,206 lbs. of seed cotton raised by Messrs. Jordan and Lockett on six acres, has produced no effect.

CORN.

We sincerely hope that every planter and farmer has planted largely of corn, and that in calculating the acreable yield he has estimated it below rather than above the average. If he finds at corn-shucking time that his pile is larger than he expected, the disappointment is of a kind which can be easily borne. He will be compensated next spring by being relieved from the necessity of sending his teams to the depot after Western corn for which he would have to

pay from \$1 50 to \$1 75 per bushel, and if he looks on his strong box or at his bank account, he will find his balance larger than that of his neighbor who was "not fool enough to plant land in corn to get a few bushels worth perhaps \$12 or \$15, on which he could raise a bag of cotton worth \$100."

When the cotton crop has been planted, all hands should give their undivided attention to the corn. A good start is half the battle. Let it be plowed deep and close so that the soil may be thoroughly broken and pulverized. When the plows have done their work—taking plenty of time to do it well—then the hoes should come on, thin to a stand, remove every weed and sprig of grass, and put a little fine earth round the plants. Let a long, narrow plow be used for *siding*, run close to the corn so that the soil round the roots may be stirred and made mellow, taking care not to throw clods upon the young plants. Let the hoes do their work deeply so that the grass may be extirpated not *top-dressed*. In thinning, let the roots be taken up. Where only the stalk is broken off at the surface of the ground it will grow again and the work has to be renewed when other things demand attention. When the corn has been deeply and closely plowed, carefully thinned, all grass and weeds chopped out, and a dressing of fine soil brought round the plants, "a good start" has been achieved, and the most important work has been done.

COTTON PLANTING.

The time to plant cotton is when the seed will come up without being checked by cold. Latitude and climate must decide this question. From the last week in March to the third week in April is about the time for cotton planting in Georgia. Taking for granted that the land has been bedded, the subsoil broken deeply in at least the opening and two side furrows of the

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row and the manure deposited evenly in the bottom of the bed, the row should be opened by a small bull tongue plow, the seed distributed by one of the most approved cotton seed planters, (we have found the Dow Law do excellent work) and covered lightly with a board, or better still, with a harrow. The seed should be well rolled in ashes or gypsum. They can thus be dropped more regularly and evenly, and if planted with a planter, come up in a narrow straight line which saves much labor when the hoes come round to give the first chopping. Two bushels of well rolled seed to the acre, if sown by a Dow Law planter, are ample to secure a good stand.

When the cotton is well up the first thing to be done is to "run round" it with a plow, as closely and *deeply* as possible. Some people do this with a turn plow, running the bar next to the cotton, and some do it with a scooter or with a sweep. Where the bed has been freshly made, that is, only a few days before the seed were planted, this deep siding may not be so necessary, particularly where the soil is naturally sandy and loose. But if the soil is at all liable to bake, the deep siding is all important. A long narrow scooter, is in our judgment the best plow with which to side cotton. When this is done let the hoes follow to chop the cotton into bunches, leaving space between the bunches the full width of a hoe. Let four to six stalks remain in a bunch. The hoes should also at this time cut out all small grass and weeds, leaving the crop perfectly clean, and allowing nothing to remain which will consume any of the nutriment which belongs to the plant.

SWEET POTATOES.

It is time now to prepare the land for sweet potatoes. If those to furnish "draws" were bedded last month there will soon be enough for the first planting. Break the ground deep, open wide furrows, put in plenty of well rotted manure or some good superphosphate, throw up a wide flat bed, removing all clods, and then you are ready for the "draws." Take the draws carefully from the bed so as not to disturb the potatoes from which they spring. Dip them in a thick paste of fresh cow stable manure and fine mould mixed with water, and then dibble the plants about 15 inches apart in the row and as deep as possible, so as not to cover the bed. "Draws" when 6 inches high are fit to plant.

DRILL CORN, MILLET AND HUNGARIAN GRASS should be sown now, provided the land has been well prepared and enriched. Except in rich deeply plowed soil it is idle to plant these crops

of such rapid growth. It is labor lost. But if they are well put in they will be found exceedingly remunerative.

SORGHUM CANE *for syrup*, may be planted any time this month, but if a crop of forage and seed as well as syrup are wanted no time should be lost in planting it.

SWEET POTATOES.

[We are indebted to our esteemed friend, Capt. Pope Barrow, of Maxey's, Oglethorpe County, for the following valuable paper on the planting, culture and preservation of the sweet potato and yam.—ED. F. & H.]

SWEET POTATOES.

The following is an extract from the records of one of our Farmer's Clubs of Middle Georgia, and expresses the views of the club upon the best mode practiced in that locality for bedding, planting, cultivating and keeping sweet and yam potatoes.

First. Always select the longest and best potatoes for seed. It is a great mistake to select small potatoes to bed, expecting to raise large ones. In corn, in cotton, in small grain, all farmers save the best for seed, and potatoes form no exceptions. With them as with all other crops, the best results are obtained from the best seed, other things being equal.

Second. For your bed, select a good, warm, rich place. Take a spade and cut out a trench, say from 15 to 18 inches deep, and three feet wide. Fill this with good stable manure, which should be saturated with water after putting it in the trench. Cover this with about two inches of pulverized soil, and upon this spread the potatoes just thick enough to prevent them from touching each other; cover them from one half to one inch thick with broom straw to prevent the potatoes from drawing out with the slips, and upon the straw place a layer of soil from 2½ to 3 inches deep. If the weather is cold make this deeper and scrape it off when it moderates.

Third. To prepare the land for planting, sandy loam is most favorable to the growth of this crop, and should be as thoroughly subsoiled as possible. Run off your rows from 3½ to 4 feet apart, with a medium sized shovel plow, and in the bottom of this furrow deposit whatever manure you intend to use. The best results in this neighborhood have been obtained by the use of good Superphosphate of lime. In England, the most astonishing yield has been obtained by the use of one hundred and fifty pounds of Sulphate of soda, and Nitrate of soda, (i. e., seventy five pounds of each) per acre. This, however, was

applied as a top dressing. On the shovel furrow throw a list with a common one horse turning plow, running on both sides of the furrow. Leave the land in this condition until you have your slips drawn and ready to set out, then complete the bed by throwing up two more turning plow furrows, open this with a narrow ripper, and set out your slips from 18 to 20 inches apart.

Fourth. Four or five days after transplanting, as above, work the plants with a weeding hoe, giving them a little loose dirt, at the same time open the middles with one furrow of a shovel. This is the first working. The second you side the beds with a shovel, and open the middles with a turning plow, brushing around the vines with a hoe to keep the dirt off them. The third and last working is performed by plowing out the middles with a sweep and hoeing the bed, pulling dirt to the vines, but not covering them, as this will cause them to take root and make a late crop without time to ripen. Of course no potato gathered before it is ripe can be kept sound. They should be dug after the frost has killed the vines.

Fifth. Build a house of small poles with open cracks; cut your poles 20 by 24 feet long, and cover the house with boards nailed on so as to allow no leaking. In the floor (earth) of the house dig as many holes as you desire to make banks, cauldron shaped, and 18 inches deep. Make a tube for each bank of four strips of plank, say 4 feet in length by 5 inches in width nailed together on the edges. In these tubes, along the sides at intervals, have fifteen to twenty auger holes; set one tube in the centre of each of the cauldron shaped excavations in the floor and pile the potatoes around it in bank shape until the bank reaches within about six inches of the top. Then cover the potatoes over with broom straw or corn stalks and on this put a layer of soil six inches thick. If the weather is very cold put on a little more dirt and plug up the mouth of the tube with leaves or straw, which must be opened, however, as soon as the weather moderates. Every year (after the first) the floor of the potato house should be wet with water before putting up the banks. This is important. No one should be allowed access to the banks except an experienced and careful hand. Of course, the house should be kept carefully locked.

The largest consumption of cotton in Great Britain during any one year was in 1880, when it reached 2,523,060 bales, weighing 1,079,321,000 lbs.

The chestnut came from Italy.

The Labor Question and the Agricultural Resources of the South.

PRIZE ESSAY BY FRANCIS FONTAINE.

(Continued from March Number.)

In the United States, other than the Southern States, the blending of the conflicting nationalities into one American type, as regards labor, is being rapidly accomplished. The Irish emigrant jostles the German; Danes and Slaves commingle; the Latin races compete with the stronger Anglo-American. There too, the ties of commerce have stifled the voice of prejudice as regards the one to his neighbor.

Custom, association, commerce, have taken down the theories of the early political economists. "Le profit de l'un c'est le dommage de l'autre," said Montaigne. "I cannot," said Voltaire, "desire the grandeur of my country without wishing for the abasement of its neighbors."

The economy of that period was a false economy; for never has the Divine mandate, "love thy neighbor as thyself," proven false to the prosperity of those who have followed it.

Solidarity among workmen, mutual trust among capitalists, are the cardinal points of the progress of civilization. Without this co-operation, without the practical admission of this fact that the profit of one depends on the profit of the other, no prosperity would bear on the sails of commerce.

The spirit of nationalities animates the people but geographical distinctions will ever prevail. Spain claims the people of the Basque Provinces as Spaniards; though they have ever been and are Basques, necessity forces them to be Spaniards. France is a united people with one autonomy; yet how long were the inhabitants of Bretagne being transformed into Frenchmen?

Italy is one kingdom, every element uniting to elevate "*il re galantuomo*." Yet how different is the Neapolitan from the native of Lombardy.

The Slavonic nations thirst for their common *patrie*, but how useless is Hungary to resist Austria, aided by geographical power.

All Germans have a common dream: the restoration of the Empire of Cherlemagne. The disappointed of all nations have one haven, in lieu of the realization of their hopes. Beyond the seas is a vast continent, with extended arms ready to receive all who may seek its embrace. Ten days after his departure from home the foot of the emigrant touches the soil of the New World; in ten minutes he may speed the news of his safe arrival to his friends at home. "Home," he had none! but the broad American

Continent, yet virgin in its attractions, bids him choose the region where, as the crown of industry, "he may plant his vine and fig tree."

If he be German, he follows the track of his brother German, for where they go they Germanize. Whole States are Teutonic rather than American. Frugal, industrious, and sober, he is a reliable laborer, until he founds his own home—he then is one unit more to the productive force of the country. Persuaded by his pre-formed prejudices, duped by agents appointed for the purpose, he is led to avoid the Southern States, and is at present an influential element, but ever welcome and inevitably a good citizen. The apathy of the South with regard to this has prevented our resources from being made known, yet our variety of climes and productions extends a welcome to all Europeans. From the cultivator of tropical fruits to the mountain vine-dresser, millions of acres await one and all. The hurry, impetuous energy, and excitable temperament peculiar to the South, the pride of conservatism, the influence of "broad acres," have developed an influence which threatens most serious results. We allude to the action of the "Commercial Convention" at Memphis, Tenn., and the reports of the press of the South with regard to Chinese emigration. To bring these Asiatics *en masse* to till our Cotton fields side by side with the African nation, seems to our inexperienced eye, fraught with evil. If laborers are so imperatively needed, why not bring them from Africa at once?

Shall we lose sight of the "irrepressible conflict" of races so antagonistic as these? "Easier is it for the leopard to change his spots" than to merge the Mongolian and the African into a common bond, entered into for mutual good. The status of the laborer determines that of society. The negro is imitative, the Chinaman inventive; the negro dependent, the Chinaman "frugal, industrious, and ingenious"; the negro naturally adopts the ideas of his more civilized co-worker, the Chinaman clings to his cue, his "Temple of Josh," his idolatrous habits. The Asiatic, imbued with the ethics of the "Celestial Empire," impressed with the superior civilization founded by Confucius thousands of years ago, skilled in the ingenuity and patience incident to the denizens of the most densely peopled country in the world, will be a dangerous social element, not to speak of the political influence. With one degraded race, the issue of savages, still standing with one foot on the side of civilization, and the other touching

the verge of fetish ignorance, will it be well to add to it another, the degenerate scion of antique usages, drawn thither by opposite causes, incited by opposing impulses, actuated by contrary instincts, and having different views of heaven, earth and hell? Should this take place, how will the South compare with other sections when her population shall have attained what it now is in New England?

In trying to thus prop up the structure of the *Old Regime*, already tottering from its own weight, are we not surely preparing for its early destruction? We should build up that edifice consecrated to labor, as a "Temple of Peace," and build with such materials as shall make it permanent. If immigration from China is left to its natural seekings it will not probably be sufficient to be of much moment. But if aided by government, fostered by capital, nurtured by the selfish interests of the few who ignore "all that posterity has done for us," we see only the darker shades of the picture. The lamp of experience sheds a glowing light upon it. Let us heed the warnings of the people who alone of all the world have largely tried the experiment. Senator Casserly, in a recent speech in California, (San Francisco) said: "It is the duty of every class of men to unite to prevent the introduction of the Chinese." Public sentiment in California sustains him. If its coming be spontaneous, or if the humane, "best government the world ever saw" puts them on "reservations," as it has done the Indians, we would welcome them as an additional productive force. But if they should become our chief industrial element, society will experience a shock Vesuvius-like in character.

*Though the doctrines of Confucius born 550 B. C., nearly the cotemporary of Herodotus, the father of Grecian History, and of his follower, Mencius, whose ethics so closely resembled the mystical numbers of the Greek philosopher Pythagoras, may have been in those remote times adapted to the affairs of men, they will scarcely flourish in America, nor find congenial the rays of the XIX. century. Though we find in the political economy of the same Mencius, written two thousand years ago, rules for the *division of labor* that have not been surpassed since, and the necessity of inequalities of the different orders of society; though he calls agriculture the root, and trade and manufactures the branches of wealth; yet there remains the fact that "the Chinese are a nation of

*China and the Chinese, by John Francis Davis, F. R. S.

incurable conservatives." The primitive classification of the four ranks into which the people were then divided: 1. The learned; 2. husbandmen; 3. Manufacturers; 4. Merchants—remain essentially the same to-day. Hume, Ricardo, Adam Smith, with all their followers; experience, aided by thousands of years, have not advanced China one jot in the light that we interpret progress.

Though in the science of mechanics and machinery they practically applied all the other mechanical powers, they are totally ignorant of the screw. Though they invented the art of printing, the mariner's compass, gunpowder, are workers in metals and woods, they are nearly as ignorant of navigation as they were a thousand years ago, and know nothing of steam as a motive power. The primitive mode of travel on the canals to-day is what it was 600 years ago when they were formed under the Mongol conquerors of China. The Chinese Government of to-day is the patriarchal system of the first ages, made effeminate by centuries of peace and superstitious subordination. The systems of religious belief are three. Confucianism is the orthodox State religion; *Fo*, or Buddhism; and the sect of *Taou*, or Ritualists, all opposed to the Christian religion. Tradition among them makes Jesus an inferior deity; and in the library of the Emperor the Bible is considered a work upon politics! The dogma of materialism originated in China, and is the essence of Chinese theology. They worship the divinities of the Buddhist mythology, in spite of their persecution by the Brahmins, while the Christian faith is rejected. Professed fatalists, they abound in charms and superstitious talismans, rivalling fetish. Though our rice fields long for their system of irrigation, would it be well to have in our midst Buddhist Temples, and see sacrifices offered to the "Temple of the Winds," etc?

Could we limit their number no doubt they would introduce, with great profit, the cultivation of silk, since the climate and soil of the alluvial country of the province of the Che-Keang is so nearly like our own. But in China "there is no meadow cultivation whatever; nothing is raised for the food of cattle, but all for man," the smallest possible number of horses, and animals for labor or draught—scarcely any domestic animals are kept, there is a very limited consumption of any kind of meat. In Great Britain above a million horses are kept for transporting passengers and goods, and the support of each horse requires as much land as

would feed eight men. Certainly in the South the chief agricultural innovation needed already is a more extended meadow cultivation. The ordinary land tax upon the landholder in India is one tenth of the produce. The average daily wages is six pence.

The espionage in perpetual operation in China has substituted *mutual jealousy* for the principle of *honor*. "The advantageous features of their character, as mildness, docility, industry, peacefulness, subordination, and respect for the aged, are accompanied by the vices of specious insincerity, falsehood, with mutual distrust and jealousy;" they have no proper sense of the obligations of truth."

The above facts are gleaned from the admirable work of John Francis Davis, and the descriptions of the English Ambassador, Sir Geo. Staunton.

There are no feudal rights or privileges in China, and the distribution of land is probably more equal than in any country on the globe, all things considered. In physiology, the facial angle, backward inclination of the forehead, oblique insertion of the front teeth, and in other points the Chinese is the medium between the European and the Negro. Perhaps of all people in the world the Chinese are least calculated to live harmoniously with our negro population. Perhaps the South is, of all countries in the world, most opposite in its code of morals, philosophy and government.

Shape our laws as we may, the working population of this country will regulate their execution; and we have already learned that "the most perfect code of laws in the abstract is unavailing and useless, if not congenial to the dispositions of those for whom it is formed."

The God of Nature has blessed our clime more than other climes. The excellencies, the culture, and refinement of a high social standard are within our grasp, if we will exercise due discretion in the selection of the materials. Material prosperity is based on social order. The security of individuals guarantees the safety of the State; individual security is attained only by industrial order, and this latter can only be made permanent by a wise foresight in framing proper laws relating to the lever of American society, the laboring class.

A CORRESPONDENT of the Massachusetts Plowman calls attention to an old method of cleaning pork barrels. He puts in the empty barrel an armful of straw, hay or shavings, sets it on fire and lets it burn out undisturbed. He then finds the barrel pure and sweet. There is no better way.

The poppy originated in the East.

OUR POSITION AND OUR POLIOY.

BY JOHN SCHLEY.

The financial, agricultural, and political condition of the country is but the culmination and result of the doctrines and principles of the old Federal party, which, in the very inception of the Government, were born and nurtured in the Northern and Eastern States, and which, although defeated and kept down for a long series of years, during the early political contests of the country, by the Democratic or Republican party, raised their gorgon head at every political contest with indomitable energy and perseverance, and under different phases and names, and by the use of every device, humbug, and ism. Finally, the advocates of those doctrines and principles embraced abolitionism, and adopted the name of the party which vanquished them so often, and kept them down for so long a time, and thus united the North, East, and West, and the Whigs and Democrats of those sections against the South upon sectional issues. By this last resort they finally triumphed and obtained possession of the Government, which determined the South to resort to armed resistance to free herself from the sectional issues, oppressions, and wrongs which their advocates, with a determination and energy worthy of a better cause, determined to force upon us.

Our failure to succeed in that contest only hastened the inevitable result, and furnished an excuse to the successful party, with a vindictive and revengeful spirit, under the name of Republicans, to carry out their cherished sectional policy, and to fasten upon the South and the country those hateful and unconstitutional Federal doctrines and principles, of a strong central Government, national bank, high tariff, and internal improvements, by the general Government, and engraft upon the Government and country doctrines and oppressions more horrent; ataxation without representation, denial of the right of the writ of *habeas corpus*, substitution of military for civil government, appropriation of private property of the citizen to public and private use without compensation, oppression and disfranchisement of the Southern States, placing them in a state of vassalage, at the mercy of a venal and corrupt Congress. Under this state of things, in a political point of view, the South is powerless.

Therefore it behooves us to look to ourselves and to our section, and endeavor to make our agricultural, mining, manufacturing, financial, and commercial advantages fruitful, productive, and independent; and as instruments in our hands, make us independent of the North and the Government, and endeavor to check that indomitable spirit of oppression thus wantonly exhibited by them and visited upon us, and through and by those means in our power, eventually, as heretofore, so far control the political destiny of the country as to bring the Government back to a proper, honest, and constitutional administration.

This can be done if proper means are resorted to, and energy, perseverance, and industry are used, to induce the cotton planters of the South to concentrate their energies, interest,

and means upon some plan of operation through which the whole cotton crop of the South can be controlled for their mutual benefit and the prosperity of the South.

It has ever been the case in every age, and in every civilized manufacturing and commercial country, that the agricultural interest is made tributary and a prey to the manufacturing and commercial world. Ireland, India, Australia, and other British provinces have made, and make England the great financial and commercial power she is, by their agricultural products, as the Southern States have made, and make the United States the great and powerful country she is, by the production of cotton, rice, sugar and tobacco.

Why is this so? It appears reasonable to suppose that the producer of an article of prime necessity required by all could get any price demanded, commensurate with the necessity of the consumer or manufacturer. This would be the case if there were only a few producers of an article or articles of food or clothing, which the balance of the world could not do without, if the producers could combine and concentrate their interests and views, and determine to demand a highly remunerative price, but not high enough to check consumption.

This is just the difficulty with the cotton producing interest of the South. Cotton is an article of prime necessity, and the manufacturing and commercial world are obliged to have it at any price which will enable them to manufacture and consume it; but for want of combination and concentration on the part of the producers, and often from their necessities, the manufacturer and speculator so manage, by devices and tricks in trade, as to compel the producers to sell at their prices, instead of a fair, remunerative, producer's price.

The statistics of the supply and consumption of cotton in Europe and the United States for the years 1866 and 1867, and 1867 and 1868, show that the amount of cotton left over at the commencement of the season of 1866 and 1867 was 1,426,700 bales, and at the commencement of the season of 1867 and 1868 was 1,172,000, whilst the amount left over at the conclusion of last year was only 651,400 bales against 1,172,000 bales left over at the commencement of that season, showing a small surplus to work upon from the conclusion of last season until the present year's crop reaches the manufacturers. And it also shows the great increase of consumption of 495,900 bales for the year 1868 over the previous year, notwithstanding the United States increased her production of 1868, 281,000 bales over the production of 1867.

The crop of cotton of the United States (as shown by the same statistics) for the years 1866 and 1867 was 2,819,000 bales; and the crop of all other countries for the same years was 2,601,000 bales, which two amounts added to the surplus of 1,426,700 bales left over at the commencement of the season of 1866 and 1867, made the whole supply for that season 6,346,700 bales, while the amount consumed that season in the whole of Europe and the United States was 5,174,700 bales, which left from the whole supply for that season the surplus of 1,172,000

bales at the commencement of the season of 1867 and 1868, which was 254,700 bales less than the surplus of the previous season. During the season of 1867 and 1868, the crop of the United States was 2,600,000 bales, and the crop of all other countries was 2,550,000 bales, which two amounts added to the surplus of 1,172,000 bales left over at the commencement of the season of 1867 and 1868 made the total supply for the year 1868, 6,322,000 bales—while the whole of Europe and the United States the same year, consumed 5,670,600 bales, which left only 651,400 bales surplus at the conclusion of last year. The above statistics show that the United States produced in 1868, 281,000 bales more than they produced in 1867, while the balance of the cotton producing world produced 51,000 bales less than they did in 1867, while the consumption of Europe and the United States increased 495,900 bales. Therefore if Europe and the United States should consume this year as much as they did last year, 5,670,600 bales, and the crop of the foreign cotton producing world should not be increased over their last year's crop of 2,550,000 bales, and the United States should only produce 2,500,000 bales this year, those two amounts added to the surplus of last year of 651,400 bales, the whole supply for this year would only be 5,701,400 bales, only 30,800 bales, more than was consumed last year, and consequently leave only 30,800 bales surplus at the commencement of the next season, instead of a surplus of 651,400 bales which was left over at the conclusion of last year. To leave a surplus equal to that of last year, the United States would have to produce this year 3,120,600 bales, provided the foreign cotton producing world does not increase its crop over last year's crop; that they will not, is altogether probable, from the fact that last year they produced 51,000 bales less than the year before, showing that, under the previous and present ruling low prices, the foreign producer can not compete with this country, and their crops must diminish as ours increase.

In answer to the question of how formidable a rival is India to the United States as a cotton producer for the world, Mr. Edward Atkinson, in a lecture delivered before the American Geographical and Statistical Society in 1865, remarked: "India, the land of great promise, but little performance. She has given England during the war a little over a million of bales per annum, of short, rough and dirty fibre, and seems to have reached her limit. In consequence of the decline of American cotton to thirteen pence last spring (1865), the crop of India cotton is already diminished. The theoretic crops of five and six millions bales prove to have no existence in fact, or at least, if made, are nearly all required for their 180,000,000 of people."

The truth is, India is not a true cotton country; her crop is only thirty to one hundred pounds per acre. Exotic seed does not produce thrifty plants for more than one year, and in the face of our competition India must go back to its former insignificance.

India cotton can be used for coarse yarns, and a much larger proportion has already been

spun in Germany, where labor is abundant and cheap; but, with the scarcity of labor prevailing in Lancashire, spinners will be forced to use our cotton or lose their operatives.

The Manchester Cotton Supply Association laments over the misgovernment of India, and in truth one can hardly realize in this country the obstinacy with which her land tenure is kept almost unaltered; but a change of government cannot change climate and soil, nor can it, under a century or two, change the character of the Hindoo people.

In 1857 Great Britain consumed of American cotton.....627,198,000 lbs.
In 1860 she consumed of the same.....956,894,000 lbs.

Increase.....329,696,000 lbs.
In 1860 Great Britain consumed of all other sorts than American.....124,706,000 lbs.
In 1864, during the war, she consumed only.....491,147,470 lbs.

Increase.....364,441,470 lbs.
So it appears that under the stimulus of war prices, the increase of supply was but little more than the increased want, even had America obtained an average crop of four million bales.

In 1860 the total supply of all Europe was 1,797,400,000 pounds, of which we furnished eighty-seven and one half per cent., at an average cost of eleven and one half cents per pound, equal to a little over \$200,000,000.

In 1864 (during the war) the total supply of Europe was 928,896,180 pounds, of which we furnished only eight per cent. The cost was forty-four cents per pound, equal to \$400,000,000.

The above statistics of Mr. Atkinson shows that whilst we produced our large crop of 1860, the whole of Europe produced, same year, 126,706,000 pounds, or 281,569 bales, averaging 450 pounds.

That under the stimulus of war prices of forty-four cents in 1864, Europe and other producing countries other than America only increased their product of cotton (of the amount consumed in England) 864,441,470 pounds, equal to 809,870 bales, averaging 450 pounds; and the whole supply for the same year was 491,147,470 pounds, equal to 1,091,489 bales, showing a decreased consumption in England of nearly one-half of what she consumed of American cotton alone in 1860, consequent no doubt upon the want of production and supply in the absence of the American crop.

The above statistics clearly prove that the Southern States will always be the producers of from one half to two thirds at least of all the cotton consumed in Europe and the United States; besides this, the fibre being longer, finer, and a stronger staple, as well as better and neater prepared than the foreign product, it will be preferred, and consequently bring a much higher price in Europe and this country, and must eventually supplant the foreign and inferior grades, if a reasonable and remunerative price to the producer is demanded, so as not to check consumption.

The present ruling prices of our cotton is sufficiently remunerative to the Southern planter, and the above statistics prove that they are not high enough to check consumption of the article; for under those prices, and even higher, the consumption for the year 1868 increased 495,900 bales over the consumption of 1867, under an increased production in the Southern States in 1868 of 281,000 bales, and a decreased production in the balance of the cotton producing world of 51,000 bales.

Now, to maintain and render stable the present prices and compel the Northern and European speculator and manufacturer to pay the prices is the question. Can the producers of cotton in the Southern States adopt any plan by which they can control the prices of their cotton within reasonable, remunerative, and consumption prices? It can only be done by combining and concentrating the interest and exertions of all the cotton planters of the Southern States upon some policy or plan, so they can act in unison and concert through some one head, or organized corporate body, to manage and control the whole cotton crop for the common good of all, as well as for the prosperity of the South. Why can not the cotton interests be managed and controlled for the interest of the producers as the banking interest is controlled and managed for the benefit of the stockholders. In one case cotton is subscribed to form the capital of the bank; in the other money, and frequently promissory notes of the individual stockholders, and, in our present national banks, bonds are pledged to form the capital of the bank. Will not a bank based upon cotton pledged and in possession of the bank to form the capital stock be safer and better than the banks we have?—particularly if the bank has control of the whole cotton crop—cotton can be demanded and obtained for the cotton, which would go into the vaults of the banks to redeem the bills, which would make them equal to specie, and thus bring the country back to a specie basis and circulation. I am convinced in my own mind that a cotton planters' bank, established upon a right basis, and conducted upon proper principles, is perfectly feasible, also that it will be the best policy and plan to combine and concentrate the cotton interest of the South for the benefit of the producers, and would be the means of producing great and beneficial results upon our financial, manufacturing, and commercial interests. I am equally well convinced that after the receipt of the proceeds of the present crop by the planters, that they will be relieved from debt, and have a surplus to go on for the next year; that if proper means are used, and exertions and energy made to induce the planters of the South to subscribe a portion of their next and succeeding crops for a few years, to form the capital stock of such a bank, and bind themselves to send their future crops to be sold by said bank, as they now consign them to their factors and commission merchants, the plan I propose can be successfully accomplished.

Therefore I suggest that the Committee of the State Fair to be held at Macon, or the Cotton Planters' Convention at its next meet-

ing, recommend to the next Legislature to incorporate a Cotton Planters' Bank, with a capital of \$300,000,000, with power to establish branches or agencies in each cotton producing State, with the consent of such States. That the mother bank be located at Savannah, and have branches at other points desired in the State. That said bank and branches shall have the right to issue bills and do business upon any and whatever amount of cotton each may have on hand subscribed or consigned to them. To ascertain the amount and value of bills to be issued, the cotton on hand to be valued at twenty-five cents per pound, and coin in the vaults for which cotton may have been sold, to be the guide as to the amount of bills to be issued. That said bills shall be payable in coin or cotton, and to be redeemed at the option of the bank in coin, or in cotton at the market price; but in no case are said bills to be redeemed with cotton at a less price than twenty cents in coin, which is to be the minimum price at which said bank or branches shall be allowed to sell cotton subscribed or consigned to them for sale. That said bank or branches shall not be allowed to export any cotton, but be compelled to sell the same in the State where produced, for coin or their own bills only. That said bank or branches shall be allowed to advance to the planter twenty cents per pound upon one half or two thirds of his crop held by the same, at the rate of seven per cent. (and no more) per annum, and to charge two and a half per cent. for advancing, and they shall also be allowed two and a half per cent. for selling said cotton, with the usual charges of drayage, storage, etc. If an export tax shall be laid by the Government, and if the bank or branches be compelled to pay it, to charge the amount of such export tax additional to the market price.

After the charter of such a bank shall have been granted by the Legislature, the next thing to be done will be to appoint proper agents or committees to go to each cotton producing State of the South, and have an act of each State passed consenting to the establishment of said branches; and for such agents or committees to get every cotton planter in every county in each of said States to subscribe one fifth of his next year's crop, and one fifth for the four succeeding years to the capital stock of said bank and branches, and bind himself to consign his future crops to said bank or branches, or their agents or commission houses designated, nearest to such stockholder, for sale or control by said bank or branch. That each cotton planter who may be a stockholder, may appoint some fit and proper person of his county to vote his stock for the purpose of electing directors of said bank or branches, which directors when so elected shall choose one of their board for President. The President and Directors shall then choose or appoint all the other officers, agents, and commission houses for said corporation throughout the State in which said bank or branches may be located, and fix their salaries or compensation, and put them under bond for the faithful performance of their duties. Each branch to report each month to the mother bank the state of the branch bank, its opera-

tions, etc., and the mother bank to also make monthly statements of the bank and branches to the stockholders.

I refrain from going farther into the particulars of the construction and organization of such a corporation, as that will be matter of future consideration and legal enactment, if my suggestions shall be approved and acted upon.

Now let us endeavor to see what would be the practical workings of such a bank and branches, and the probable effect upon the interest and well-being of the cotton planters of the South, upon the currency and exchanges of the country, and the financial and political effect upon the Southern States.

At the end of five years every cotton planter would be a stockholder to the amount of one year's crop of cotton, which would be a good and safe investment.

For the first and succeeding four years operations of the bank and branches, as fast as the cotton is sent forward and in possession of the bank or branches, bills could be issued to the amount of cotton on hand at twenty-five cents per pound, to supply a circulating medium, and advance to the planter to the amount of one half or two thirds of his crop. When the cotton was sold for coin, as nothing else would be received in payment, except the bills of the bank, the coin in the vaults of the bank would constitute the capital to redeem the bills previously issued.

At the end of the first year, after the whole crop was sold for coin, it would be in the vaults to redeem the bills that may have been issued; and the balance due the planters for their cotton sold, could be in bills, which would be represented by the coin in the vaults, and redeemed in coin at any time demanded, which would make the bills equal to specie.

The planters would be secured against the great fluctuations in the price of his cotton, and could always calculate upon getting at least the minimum determined upon, and he would be thus protected against cotton and gold rings, and the devices and plans of the manufacturer and speculator to put down the prices of cotton.

The bank and branches should be prohibited by the charter from issuing more than the amount of the capital of \$300,000,000 as that will be a sufficiently large circulation, and will always keep the bank and the branches within safe bounds, able to redeem every dollar in coin that may be in circulation, and at the same time would prevent such a mammoth corporation from exercising a dangerous and pernicious influence upon the financial and commercial world, and from endangering the safety and solvency of the bank and branches by over issue.

A sound and safe specie currency would be established, and prices of articles and value of property would be brought to a specie standard, and the country relieved from the spurious, fluctuating, and worthless currency with which we are now cursed.

In the end the South would become the great money centre from which our surplus capital would radiate.

The bills of the bank and branches would be as current in New York, Paris, and Liverpool

as they would be at home, and in fact preferred and sought after wherever cotton is wanted, to relieve the foreign speculator and manufacturer from the necessity of bringing their bags of coin to purchase cotton, as then cotton could not be purchased upon the credit of bills of exchange drawn upon English and French houses, nothing but coin or the bills of the bank being receivable.

Exchanges would be in our favor, instead of, as they now are, against us, as the imports of the South would not amount to half of the value per annum of our cotton crop purchased and sent abroad.

The surplus capital of the bank and branches as well as any surplus cotton left over in the possession of the bank and branches could be used to build up manufactories, railroad, and other enterprises in the South, which would develop our section and add to our wealth, prosperity, and population.

Thus, through and by our productions of cotton, advantageously managed and utilized, our manufacturing interest would be greatly extended, our financial and commercial interest much increased, enlarged, and placed upon a healthy and sound basis; and the South then acquire her proper standing and influence at home and abroad; and would be again in a situation where she could exercise a wholesome influence upon the political issues of the country, and be the means of bringing the government and its administration back to its former purity and prosperity.

The foregoing thoughts and suggestions in relation to our position and policy are respectfully submitted, with the hope that, if they should not contain a sufficiently feasible, matured, and practicable plan to accomplish the end desired, they may be the means of suggesting some mode, by others more conversant with the subject, which may relieve the cotton planters of the South from their present difficulties and establish some future policy or plan which will place the South upon a firm basis of prosperity, independence, and power.

WHAT IS PLANT FOOD?—All that plants consume in their growth is plant food; but then there are other things which cause them to grow. There may be sufficient nutriment within reach of the rootlets, but it may be in such a state that it cannot be appropriated, just as a bushel of corn might stand within reach of a starving man who has no teeth, without benefit to him. A proper proportion of acids, alkalies, etc., must be in the soil to modify and render palatable the mineral and vegetable matter Providence put there for the nourishment of plants. To this end the soil must, in a sense, *breathe*. It must be kept light and porous, that the atmosphere may thoroughly permeate it, and produce the chemical changes necessary for the best subsistence of the plants, and to facilitate the absorption of the falling rains for a similar purpose.

The India cotton crop is estimated to be in excess of last year—the crop however being in a more backward state.

(For the Southern Farm and Home.)

The Policy Planters Should Adopt to Protect themselves Against the Combinations of Speculators and Capitalists.

BY B. D. LUMSDEN.

It was said before the war that no set of people were more independent than the Southern Planters. This fact was known and recognized by all. Owning his own laborers, living on his own plantation, and raising everything he consumed save his coffee and sugar, with a fine income from the net proceeds of his cotton, he could bid defiance to the combinations of speculators and capitalists. Times have changed, the war left our Planters poor. From the most independent they became the most dependent. Emancipation deprived them of their main wealth. The constant demands for supplies and stock for the use of the army, left them almost bare of stock and provisions. The stock and provisions were not in the country and there was no country open to supply the deficiency until the war closed. As few planters had laid up any specie, and but few having cotton on hand, they were necessarily left at the mercy of speculators and capitalists to supply them means to purchase their supplies of stock, corn and bacon.

Cotton ruled high, planters lost sight of every thing save the "fleece king," mules must be had to plow, corn must be had to feed the stock and laborers, bacon must come, or all is lost. To increase the crops manures must be used; not having them on the plantation, resort must be had to Commercial Fertilizers. All these things had to be obtained, and with no money on hand they had to be bought on a credit and buying on a credit puts one at the mercy of the speculator and capitalist. Capital from abroad came in and speculation on the planter began. This was so the first year. A failure of crops, the low price at which cotton has ruled and the unreliable labor which the planter had, have still kept many at the mercy of the capitalists, and the high rates of interest they demand must soon bankrupt those who are obliged to borrow.

The plan or policy to resist these combinations of capitalists and speculators is for the planter to so manage as to hold his cotton until he receives a remunerative price for it. How can this be done? Not by forming Planters' money associations or corporations, for to carry these on you will need capital or borrow money from other sources—for few planters have money to put into stock companies. I will tell you the secret. But it is no secret; it was known before the war. It is this: **LIVE ON YOUR FARM.**

Raise everything you can—your corn, your pork, and your mules. Make your own manure, and even make your own syrup. Then what cotton you make can be held. No cotton will have to be sold to meet your provision, mule or guano drafts. When you sell, the money is yours, and after buying your supplies not made at home, you will, nine

times out of ten, have something left. We need not be told that we cannot raise these things. Nature has peculiarly blessed our country with a soil and climate suited to a mixed husbandry. These things were raised before the war, and they can be raised again. Look around you and see what planters are now in the best circumstances, and you will find that they are those who raised their own corn, meat and mules. What does it profit you if you raise two thousand dollars worth of cotton on your place and spend it all for corn, meat and mules, to carry on the farm? Would it not be better to raise one thousand dollars worth of cotton, and raise corn, meat and mules? If you did not make anything in the latter case you would save the hauling, have better and fatter stock, have better meat and not be at the mercy of the speculators. Raise your own corn. It is cheaper, I contend, to raise it than to buy it on a credit. You pay \$1.50 per bushel for it. If you haul it home any distance from the Railroad, it will cost you 10 cents per bushel. The loss of weight is, say, 5 per cent. Rotten and damaged corn often 10 to 20 per cent. Interest at $2\frac{1}{2}$ per ct. per month, and then, perhaps killing a mule or two, which often happens, and you can safely calculate that it costs \$2.00 to \$2.25 per bushel. Where we can raise, as was done in Griffin, 120 bushels per acre, or 80 bushels as in Putnam, does it not pay? We cannot all make our crops yield such returns, yet it will pay, and does pay, to raise corn. There are other crops, oats, wheat, rye, barley, peas, etc., that can be made to pay. In the last few years some of our experimental farmers have made 40, 45 and even 50 to 60 bushels of wheat per acre. Does that not pay?

Raise your own pork, and get rid of the bacon speculator. By proper attention pork can be raised in Georgia cheaper than it can be bought here. One man last year to my knowledge, made the manure from his pig pen pay for what corn his hogs eat, and at eleven months old they weighed 140 lbs. I raised last year six or seven cwt of pork, at a cost of about eight cents. If it cost you the same that you could buy it for, it is better meat, you have your own lard and the satisfaction of knowing the meat is healthy and that you raised it, and that the speculator has not fleeced you. For instance I have ten pigs, worth, say, \$1.00 each. Say it costs me \$1.00 each to feed them until my pea field is open, that is \$2; now, say it costs me \$5.00 each to feed on corn before killing, and we have the cost of each hog \$7.00, and of 10 hogs \$70. Say that we lose half, that would make each hog cost \$14, now, with a good stock of hogs we can safely calculate on 140 pounds each, which would only be 10 cents per pound. Is it not easier to pay out by degrees, or feed corn, which is the same thing, than to go to a drover and pay him the money down for the same amount of pork? If the hogs or pigs are kept up you run no risk of loss by stealing, and the manure will amply pay the extra expense and something towards the feeding. Raise more beef and mutton, and we can dispense with so much

bacon. Sheep in Georgia can be made profitable, especially in Middle Georgia.

Raise your own mules or horses and you are rid of the stock speculator. I would recommend this plan. Have one third of your plow stock mares. Most farmers keep an extra horse. Let that be a mare. When your mare is about to foal put the extra buggy or saddle horse in her place, a few weeks rest will do for the mare that has foaled, and she can then be used again. In that way you can obtain colts. Colts can be raised cheaper than you can buy mules or horses. With proper management you will not have to feed them more than four months. Say four bushels corn per month, or \$30 to winter—a colt at three years costs you \$60 or at most \$80. You now have an acclimated mule ready for work, which costs you not more than half what a drover would ask you for the same mule or horse. By judicious care with good rye or barley lots, colts can be raised without any appreciable cost to the planter. This can be done by having one or two acres of barley, rye, or lucern, for winter and early spring use, then with the run of the old fields in summer and the pea fields after harvest, your colts can be raised without feeling the cost.

Make your own manure. This is a great item in farm economy. Improve your lands by judicious management. Make them bring two ears of corn where now only one grows. Make two blades of grass grow where now only one grows, and save plenty of hay which can be done at small cost. Make three bags of cotton where now only half a bale is made, and you save labor.

Use improved machinery and labor-saving implements, and you will have no occasion to sell cotton except when you desire to do so. If you should raise more corn, meat or mules, than you need, you can help your neighbors, perhaps, who are not so fortunate.

In conclusion, then to keep out of the clutches of land-sharks and speculators, adopt my plan. Live on the farm. Raise everything you can, corn, wheat, meat, horses, beef, mutton, syrup, and make your own manures. Improve your lands, and $2\frac{1}{2}$ per cent per month will leave you, and corn, meat, mules and guano drafts will be unheard of.

For the Southern Farm and Home.

AGRI-HORTICULTURAL.

A very interesting addition to the archives of our race could be formed of a chapter on things that we look at but don't see!

As the South has resolutely turned her thoughts on Agri-horticultural improvement, it becomes every one of her sons to contribute at least a mite to the great fund she is accumulating.

And it has seemed to me that some good might be done by offering a sample or two of those things which we daily look at but very rarely see!

Surface manuring, for instance. No farmer can

have failed to look upon the superior fertility of spots surface manured over those in which manure was buried, and yet the mass of farmers is almost perversely indisposed to see it!

Again. We have a clamorous demand all through our borders for green winter forage. Give us that and the lost horn of abundance shall be lifted on a thousand hills! So we ransack the world for a winter grass, and if any gentleman wishes to humbug our section there is no lack of opportunity in a winter grass.

How we daily look at some such fact as this—we horticulturists—that the SOUTHERN COLLARD, growing all through the winter, yields more nourishment per square foot than any other thing that grows out of our soil, summer or winter! The great Turnip crop of England, which ranks above our cotton crop, is a mere bagatelle to what might be the collard crop of our State! Taking a square in my garden as a test of our capacity in this particular, I cannot put the yield down at much less than sixty thousand pounds an acre; and taking my own experience as a test of its value as a winter feed for cows, hogs and perhaps horses, I should say that we had nothing superior and Europe nothing to equal to it. Will our people look at that so as to see it? When they do we shall have cattle again and we shall not need to dread the day when the "enclosure law" will enact itself in our borders.

There is another thing frequently looked at, which it might be wonderfully economical to see. It is that the nobler animals, such as Horses, Rebels, etc., do their best work and hardest fighting on (southern) *Butternilk*.

And again. The avidity with which cattle devour cotton seed, running all the risk of lint and hull to get the kernel, is always before our eyes, yet it has not disclosed to us the folly of buying chaffy western corn, while we manure our land with better food! Who ever manured his cotton with oats? and who has not manured his oats with cotton seed? If one shall parch a few of the hulled cotton seed one shall hardly distinguish them by nose or palate from the veritable pea-nut; and they are undoubtedly as wholesome an article of human food—disassociated from the traditional lightwood knot—as the pea-nut. Legislatures will make a note of it!

And lastly. Do we not daily look on the fact that our animals prefer sand to any other bedding, and yet do we not haul straw over miles of sand to litter our stalls with?

What picture of animal enjoyment rivals that of a drove of mules, weary with travel, suddenly debouching on a sand-bed? And who can be blind to the value of sand as a manure on at least one-half of our surface. For the comfort of our cattle and the increase of our manure heaps, I distinctly plead for SAND.

F. O. T.

The Brazilian, the first steamer arrived in England through the Suez Canal, brought 10,000 bales cotton.

Celery originated in Germany.

AGRICULTURE.

BY REV. CHARLES W. EVEREST.

How blest the Farmer's simple life!
 How pure the joy it yields!
 Far from the world's tempestuous strife,
 Free, with the scented fields!

When morning wooes, with roseate hue,
 O'er the far hills away,
 His footsteps brush the silvery dew
 To greet the welcoming day.

When Sol's first beam in glory glows
 And blithe the skylark's song,
 Pleasant, to his toll the farmer goes,
 With cheerful steps along.

While noon broods o'er the sultry sky,
 And sunbeams fierce are cast,
 Where the cool streamlet wanders by,
 He shares his sweet repast.

When twilight's gentle shadows fall
 Along the darkening plain,
 He lists to his faithful watchdog's call,
 To warn the listening train.

Down the green lane young hurrying feet,
 Their eager pathway press;
 His loved ones come in joy to greet,
 And claim their sire's caress.

Then when the evening prayer is said,
 And Heaven with praises blest,
 How sweet reclines his weary head
 On slumber's couch of rest!

Nor deem that fears his dreams alarm,
 Nor cares, with carking din:
 Without, his dogs, will guard from harm,
 And all is peace within.

O ye who run in folly's race,
 To win a worthless prize,
 Learn from this simple tale we trace,
 Where true contentment lies!

Ho! monarch, flushed with glory's pride!
 Thou painted, gilded thing!
 Hie to the free-born farmer's side,
 And learn to be a king!

From Cotton Culture in the South.

Cotton Production in India and in the United States.

BY F. W. LORING AND C. F. ATKINSON.

As an answer to the question of how formidable a rival India is to the United States as a cotton producer for the world, we ask attention to the following, taken from a lecture delivered before the American Geographical and Statistical Society, by Edward Atkinson, Esq., in 1865, to which the author has kindly added a postscript:

India, the land of great promise but of little performance. She has given England during the war

a little over a million bales, per annum, of short, rough and dirty fibre, and seemed to have reached her limit.

In consequence of the decline of American cotton to thirteen pence last spring, the crop of India cotton is already diminished. The theoretic crops of five and six million bales, prove to have no existence in fact, or, at least, if made, are nearly all required for their 180,000,000 of people.

The truth is, India is not a true cotton country; her crop is only thirty to one hundred pounds, per acre. Exotic seed does not produce thrifty plants for more than one year, and in the face of our competition India must go back to its former insignificance.

India cotton can be used for coarse yarns, and a much larger proportion has always been spun in Germany, where labor is abundant and cheap; but with the scarcity of labor prevailing in Lancashire, spinners will be forced to use our cotton, or lose their operatives.

The Manchester Cotton Supply Association laments over the misgovernment of India, and in truth one can hardly realize in this country the obstinacy with which her land tenure is kept almost unaltered; but a change of government cannot change climate and soil, nor can it under a century or two, change the character of the Hindoo people. In 1857 Great Britain consumed of

American Cotton.....	627,198,000 lbs.
In 1860.....	956,894,000 lbs.

Increase.....	329,696,000 lbs.
In 1860 Great Britain consumed of	
other than American.....	126,706,000 lbs.
In 1864, only.....	491,147,470 lbs.

Increase.....	364,441,470 lbs.
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So, it appears that under the stimulus of war prices the increase of supply was but little more than the increased want, even had America maintained an average crop of 4,000,000 bales.

In 1860 the total supply of all Europe was 1,797,400,000 pounds, of which we furnished eighty-seven and one-half per cent. at an average cost of eleven and one-half cents per pound, equal to a little over \$2,000,000,000.

In 1864 the total supply of Europe was 927,896,810 pounds, of which we furnished only eight per cent. The cost was forty-four cents per pound, equal to \$401,000,000.

In 1850 the weekly consumption of cotton in England was 29,125 bales, of which 20,767 were American, 8,310 Brazilian, 1,543 Egyptian, 3,285 East Indian, 121 Various.

In 1860 this weekly consumption was 48,523, of which 41,094 was American, 2,164 Brazilian, 1,804 Egyptian, 3,840 East Indian and 121 Various.

Thus it appears, that the immense increase in English manufacture depended on America.

Since the foregoing was written in 1865, there has been a moderate increase in the supply of India cotton, and some further improvement in the staple—induced by better methods of cultivation, irrigation—but more than all else, from the use of better gins and greater care in the process of ginning in which our southern friends may well learn a useful lesson.

But at the same time, it has become evident that the cultivation of cotton, both in India and in Egypt, has trenched dangerously upon the food crops, and it is not to be expected that any further increase can be expected from either country in the face of a probable steady decline in the cost of raising, and in the selling price of the American crop.

As still further evidence, we copy the concluding sentences of Cassel's "Cotton in the Bombay Presidency," an official report on the ca-

pacities of India for cotton raising, published in 1862. They are very striking as showing the opinions of an English official, after a careful and elaborate study of the subject.

It is important that the actual position of India, in regard to cotton supply, should be clearly defined. The pleasant illusion of a temporary demand must not be allowed to conceal the less agreeable features of sober reality.

The expenditure of some lakhs of rupees in cotton experience of a century of the cotton trade, have at least furnished data for distinct conclusions, and it is now time that the case should be rightly understood.

Leaving the other Presidencies to speak for themselves, the following results are clearly deducible from the facts of cotton cultivation in Bombay:

Exotic cotton cannot be successfully cultivated on a large scale in the Bombay Presidency, except in a limited portion of its southern districts.

Indian cotton may be improved in cleanness, and somewhat reduced in cost, but the general characteristics of its staple will not be materially altered.

In so far as this quality of cotton is serviceable to the manufacturers of England, India can compete with America; but if a finer description be required, India cannot adequately supply it.

Unless, therefore, such alteration in machinery can be devised as may render the manufacturer indifferent to length and fineness of staple, and of the probability of this others must judge, India is not likely to replace the United States.

It seems evident, then, that India cotton must continue to hold a subordinate place in European markets, and there is a point at which its competition with other growths entirely ceases.

The following article from the Cotton Supply Reporter, of Manchester, England, of July 1, 1869, indicates the slight progress made in India after eight years of insufficient supply of cotton.

That it yet remains to increase the crop from 60 to 120 lbs. per acre, is of itself sufficient proof of the hopeless nature of the attempt to supplant American cotton by increasing the India crop.

We are glad to find that India as a cotton field has recently been attracting special attention, and that the best means of making its resources available have been freely canvassed. Not only in London and Manchester, but in the various towns in Lancashire, now subject to heavy losses and privations on account of the scarcity of cotton, has the question of obtaining speedy and larger supplies been anxiously discussed. The operatives and their employers have alike taken up the subject, commencing, it is true, in several instances with an attack upon the duties now levied on manufactured goods going into India, but advancing by necessity to the more pressing and important object of promoting an increased production of cotton. In the discussion of this question, and after a careful consideration of the various countries to which we can look for relief, India is admitted on all hands to be the chief source upon which we must depend. The great practical inquiry, then, is how can we most speedily and effectually increase the production of cotton in India, and with whom does it rest to devise and carry out the necessary measure? An answer, we think, may be gathered from the discussion at the Society of Arts, London, and the lecture delivered in the Town Hall, Manchester, both of which are reported in our other columns. The difficulty arising from scarcity of labor which is so formidable and obstacle to the increased cultivation of cotton

in other countries does not exist in India, the population is ample and docile, and there appears to be no sufficient reason why the present production should not be doubled, and that too within a comparatively short period. *This would be done, and without extending the area planted with cotton, if instead of 60 lbs. we could increase the yield to 120 lbs. per acre, a result which it does not seem extravagant to expect.* The demands made upon Government are not unreasonable, whilst the advantages anticipated are incalculable,—a department of agriculture to furnish practical and scientific instruction, and the adoption of measures for increasing the productiveness of the soil,—an adequate system of irrigation so essential to the comfort and maintenance of the people,—and ample means for conveying the produce to market. The first of these requisitions, the establishment of a department of agriculture, would show the ryots, both by means of model farms and direct teaching, the best methods of cultivation, would aid them to provide manures and to make such a selection of seed as might be calculated to improve the quality and increase the quantity of their crops. Works of irrigation would not only tend to prevent the recurrence of famines, which have been so disastrous, but would greatly increase the productiveness of the soil. Colonel Kennedy pointed out that a plentiful supply of water might thus readily be obtained for this vast country and be available for irrigation by the means of "the drainage basins of the Indus in the northwest, the Ganges in the northeast, and the Godavery and other rivers which cross the peninsula in its southern divisions, from the high ridge of hills near the western coast to its eastern shores." Then again, improved roads and additional railways are urgently needed, and the want of them must tend greatly to diminish the growth of cotton and other products. This was specially dwelt upon in the discussion at the Society of Arts, and the absence of internal communication and the difficulties experienced in the transport of cotton were shown to have hindered its cultivation. These specific measures may surely be urged upon the attention of Government, and considering the value of the cotton trade to India and its importance to this country the expenditure of £1,000,000 a year on railways, £1,000,000 on irrigation works, and £50,000 on agricultural education for the development of the vast resources of India would not be an unreasonable demand if, as Colonel Kennedy estimates, "the cultivable land of India might thus be extended to four times its present area and its produce be increased threefold, so that twelve times greater product might be derived." If those whose interests are so deeply involved, whether as operatives or their employers, were to bring their influence to bear upon their representatives in Parliament, the pressure upon the Government would be such as to prevent any further neglect of the capabilities of India, and whilst agitating for a repeal of the Indian tariff, their attention should with still more earnestness be directed to the more important object of obtaining increased supplies of cotton. In this way they might render the most efficient assistance. So long, however, as there is indifference on the part of the manufacturers, and indisposition to make exertions to help themselves, we cannot wonder that apathy should prevail elsewhere.

The prices obtainable for American and Indian cottons will show, to a certain extent, the relative estimation in which they are held by consumers. The quotations which succeed are taken from the Liverpool circular of June 17, 1869, and are for the grades most nearly comparable.

New Orleans Middling.....11 7-8d.

Mobile	"	11 8-4d.
Upland	"	11 3-4d.
Surats, Dhollarahs, fair.....		10d.
Surats, Dharwars, fair.....		9 9-8d.
Madras, fair.....		9 8-4d.
Bengal, fair.....		8 1-4d.

American cotton is rapidly recovering its position of supremacy. "In 1864, the actual total average weekly consumption of Great Britain was 80,852 bales, of which 3,052 bales only came from the United States. In 1868, the amount consumed weekly was 53,880 bales, of which 21,390 bales were American."

* * * * * The capacity of the Southern States for cotton raising is, virtually, only limited by the amount of available labor.

*From the Report of B. F. Nourse, Esq., Honorary Commissioner from the United States to the Paris Exposition of 1867.

THE APPLICATION OF FERTILIZERS.

[Extract from the address of Hon. C. C. Langdon, at the Selma Fair.]

* * * * *

"There is another point to which I desire to call your attention, and that is the mode of applying fertilizers. In this great errors are made every day, and crops absolutely injured, when, if the fertilizer had been properly applied, they would have been benefited. I maintain that no fertilizer should ever be left in little heaps, nor applied in the hill or drill, but should be spread evenly over the surface, and plowed in until thoroughly incorporated with the soil so as to insure uniform fertility of the whole mass of broken up soil to its entire depth. This can never be done by simply manuring in the hill or drill. I know that many intelligent farmers recommend and practice manuring in the hill, but nevertheless, I must insist that there is neither philosophy nor common sense in the practice, and that it should be abandoned altogether. For root and leguminous crops it might answer for a present crop, but it is evident it would give no permanent improvement to the land. But for grain and other crops with fibrous roots, manuring only in the hills is at best but a partial benefit. The plant will start off vigorously under the influence of the manure in the hill, but when the roots extend beyond the manure, as they soon will, where will they find food to sustain the plant? It is known that the plant or tree is fed by little rootlets from the extreme ends of the roots. These little rootlets are sent out in every direction to gather food, which is drawn in by them, and transmitted through the veins or sap vessels of the larger roots into every part of the plant or tree. The larger roots, near the base of the plant, have ceased to perform the office of food gatherer, but in turn are themselves fed by the thousand rootlets at the extremities that have been sent out on that special mission. Now, it is very evident that if these food gatherers find nothing to communicate to the plant, the latter must suffer from want of nourishment. A full crop can never be

realized in such a case. The plan may be, and doubtless is, beneficial to a partial extent, but a full crop can never be realized, nor perfection in culture attained by simply manuring in the hill. It is usually resorted to because of the additional cost of applying the fertilizer broadcast in sufficient quantities to manure the whole ground. This is certainly very bad economy, for, if the land is worth manuring at all, it is worth manuring well; if a small quantity will do some good and yield some profit, a larger quantity will do more good and yield a larger per cent. of gain. It is the "penny wise and pound foolish" system, unworthy of the times in which we live, and must be abandoned entirely before we can realize the fruits of a perfect system of culture. The full productive capacity of our soil can never be brought forth by any such half-way expedients."

What is Progressive Agriculture?

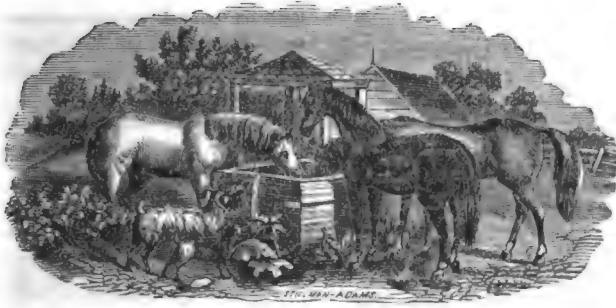
The *New York Observer* answers this question in few words but very comprehensively, as follows:

"Under its influence spring up tasty and convenient dwellings, adorned with shrubs and flowers; and beautiful within with the smiles of happy wives, tidy children in the lap of thoughtful age—broad hearts and acts, as well as words of welcome. Progressive agriculture builds barns and puts gutters on them, builds stables for cattle and raises roots to feed them. It grafts wild apple trees by the meadow with pippins or greenings—it sets out new orchards and takes care of the old ones. It drains low lands, cuts down bushes, buys a mower, house tools and wagons, keeps good fences and practices soiling. It makes hens lay, chickens live, and prevents swine from rooting up meadows. Progressive agriculture keeps on hand plenty of dry fuel and brings in the oven wood for the women. It plows deeply, sows plentifully, harrows evenly and prays for the blessing of heaven.

"Finally, it subscribes for good religious, agricultural and family journals, and pays for them in advance, advocates free schools, and always takes something besides the family to the county fair."

POLITICAL EDUCATION OF FARMERS.—Although farmers as a class, comprise a larger number than any other, yet whenever they have any public matter of especial interest to themselves, they are almost always obliged to go to one of another class or profession, in order to get their matter before the legislature or Congress. Men from another class or calling, who, of course cannot fully know or appreciate the necessity of different legislation in regard to this or that farming interest, are the only resort, and poor help they often prove. Instead of this, farmers should be so qualified to do such work for themselves. Their occupation should take its proper position as a profession, and exert its proportionate influence, civilly and politically, as it does physically.—*Agricultural Report.*

The specific gravity of millstones per cubic foot is 157 pounds.



STABLE ECONOMY.

HORSE SHOEING.

It is too often the habit of those who own horses and mules to entrust their shoeing to the nearest blacksmith, without much reference to his skill or the care with which he does his work. Thus many a valuable animal is injured. Nine out of ten of the negro blacksmiths in the country are totally ignorant of the principles of horse shoeing, and the few white men who own "shops," and profess to shoe, frequently entrust the work to a negro "striker" who is not competent to drive a nail.

In the first place most country smiths seem to believe that the horses foot is made for the shoe and not the shoe for the foot, and pay no attention whatever to the natural conformation of the foot, but set to work to rasp, pare and cut the hoof to make it fit the shoe which they have made.

Frank Forrester, a first rate authority on everything pertaining to the management of the horse, says, that the horse shoe "should have these three features: 1st. It should be for ordinary work rather heavy, in order that it may not be bent by contact with hard, uneven roads. 2nd. It should be wide in the web, and of equal thickness and width from the toe to the heel, that it may protect, as much as possible, the sole, without altering the natural position of the foot. 3d. It should be well drawn in at the heels, that it may rest on the bars and extend to the outer edge of the crust on the outside, and reach beyond the bar nearly to the frog, so that there may be no danger of its pressing on the "corn place" or angles between the bar and the crust. 4th. It should in no part extend beyond the outer edge of the crust, lest it strike against the opposite leg when the horse is travelling." All good authorities direct that the nails should not be driven high up in the crust, and that they should be lightly driven before they are clinched, and not with all the power the smith can command with his hammer.

Another bad practice is rasping away the clinches over the whole outer surface of the foot. It injures the natural covering which is given as a protection against the too rapid evaporation of the foot, and makes the hoof brittle and dry.

Except in very rare cases, the frog should never be cut or pared.

A knowledge of the anatomy of the horses foot, which can be easily acquired from that admirable work, "Miles' Manual," and of the time and mode of shoeing, with a little attention, will add considerably to the comfort of both owners and animals.

From the American Stock Journal.

ON FEEDING HORSES.

We have no hesitancy in asserting at the outset, that but a limited number of horse owners in providing sustenance for the animals under their charge, take into consideration the effects of food upon the system or the connection of the manger with the stomach, and the subsequent bearing of certain modes of treatment upon the constitution. The system of feeding horses is diverse and complex; no set formula can be laid down, for with the various qualities of horses it must vary, and the various circumstances under which they may be required to do their work have also a controlling influence. Generally speaking, all horses receive too much hay and not a proportionate amount of grain, or too much of both. Slow working horses do not require so much nutriment of a high quality as those which are called on to do quick work and perform long distances; but as a rule, all animals which have to do hard work, and much of it, must necessarily be so kept as to have hard flesh, and they cannot be so kept unless they are fed on hard grain. The faster and severer the work which a horse is expected to perform, the sounder, more nutritious and more abundant should be his food. His oats should be increased and his hay diminished. For a gentleman's road horse, in regular work and expected to perform considerable distances in good time, a small quantity of hay—say eight pounds per day—is amply sufficient, but as much oats may be given as the animal will eat. Dry hay is indisputably injurious to the wind; for ordinary work in their own stables the quantity of hay may be increased three to five

pounds, and the allowance of grain reduced to twelve quarts. A good plan is to give a good mash of stewed bran and oats once a week; this will cool the blood, give a kindly alterative to the system, keep the bowels moderately open and please the appetite of the animal. The use of nitre or drugs of any description should be studiously avoided and only used when prescribed as medicine. Many more horses than one would imagine, have their winds broken by being worked quick and hard, with their bellies distended with hay, grain and water; are foundered from being over fed, while hot, exhausted, and in a state of *quasi* collapse; are exposed to acute inflammation of the bowels, colic, etc., from being freely watered and subjected to drafts of cold air, showers of rain, or being injudiciously bathed or washed after sharp work, when their stomachs are empty and themselves craving a good dressing and a warm mash.

Horses should never be fed within an hour before being put to work, and should then be worked but slowly until the bowels are fully evacuated. Water should never be given to them in large quantities before being put to work, and not at all on their coming off work, while hot, still less when jaded and exhausted. It should be supplied them often and in abundance, not so much in large draughts at a time, which improperly distend the stomach, as in small quantities at frequently recurring intervals. New corn is emphatically dangerous as horse feed, and should never be used as such; being heating, it is very apt to cause colic and even acute inflammation. Old corn may be allowable, but should only be given sparingly and cautiously, in the ratio of two quarts where you would give three of oats. Moistening both hay and oats is especially beneficial to the wind and is a good practice. Horses are fond of salt, and small quantities should occasionally be mixed with their food.

For the Southern Farm and Home.

ROTATION OF CROPS.

BY DAVID Z. EVANS, JR., CHESAPEAKE CITY, MD.

A proper rotation of crops is as essential to systematic farming, as systematic arrangements are essential in a well regulated commercial business, for as all plants do not draw the same particular property from the soil, by rotating the crops much larger crops, and better returns can be had from the same piece of ground, as thereby the soil has a chance to rest, and recuperate its energies for another campaign, which is as necessary as sleep is to us, but all do not seem to see this in the light it ought to be seen, but will still continue to plant or sow the same kind of things year after year, and although manures are applied, yet the crops will gradually diminish. I know of some who call themselves farmers, who raise corn or wheat for three, four, or even five years, until it does not pay for gathering, when it is turned out to re-

gain its original fertility as best it may, for three or four years, when it is again cultivated, and this is a very prolific cause of the poverty of some of the Southern farms; but not all of the land South is thus worn down, for there are vast quantities of it which would produce more than the best lands in some sections of the North.

The rotation adopted by some of our best farmers is as follows, but it is very often modified to suit the exigencies of the occasion. First, corn is planted on a clover sod, this followed by oats or rye, and this again by wheat, or else substitute potatoes or something of a like nature in the place of the rye or oats and this to be followed by the wheat, and seeded down to clover and timothy, which is to be left for three or four years, when it is to be plowed under for corn, and for this reason the land has a chance to produce to its full extent. I do not refer to the crops particularly, but to the net returns—returns it would not give if successively cropped with the same crop for several years.

This rotating crops is just as essential in good market gardening, as with the common farm crops, if not more so, for although it may do to plant tomatoes, onions, and a few others in the same piece of ground, for two or three years in succession, yet should we plant melons and a variety of other vegetables, three, or even two years in the same piece of ground, it could be truthfully said that a successive planting of almost all plants in the same soil for several years is an undoubted mal-practice, as those who have found out in the rather hard school of experience can testify.

For the Southern Farm and Home.

THE DESERTED HOME.

BY SIDNEY HERBERT.

How fully the author of this poem—the Rev. Orville G. Wheeler—realized the truth of the following sentiments, which come to us from another source, his own poetic lines, clearly show: "Where one revisits the home of his childhood, or the place of his happy abode, in his life's spring time, pleasant as it is to survey each familiar spot, the house, the garden, the trees planted by himself, or by kindred now sleeping in the dust, there is in the warm grasp of the hand, in the melting of the eye, in the kind salutation, in the tender solicitude for the comfort and pleasure of his visit, a delight that no mere local object of nature or art, no beautiful cottage, or shady rill or quiet grove can bestow." To the poet-preacher, in the absence of the

loved ones of other days, there was no attraction in the old homestead, and he mournfully took his leave, sadly singing, as he went :

"Dear old deserted home,
Farewell, I cannot longer stay,
Since all I loved are far away.
Oh, let me longer roam,
Nor look again, with throbbing brain,
Upon this spot so lonely now;
A long farewell I sadly bow."

The old deserted home!
Oh! who that once could fondly claim,
A spot with that endearing name,
Wherever he may roam,*
But oft will turn,
With tears that burn,
His eyes to that familiar place,
Abandoned now by all his race.

O, I can see them well,
The snow-white house, with dark green blinds,
The path that through the door-yard winds,
The trees where shadows fell,
O'er flowering bush,
Softening the blush
Of roses bright, that mother's care
Had planted, kept and nourished there.

My mother loved her flowers,
They were the gentle counterpart
Of those which bloomed within her heart.
O, sweet the quiet hours,
She snatched from toil
And life's turmoil,
With calm communing both did bless,
With sweet exchange of loveliness.

* * * * *
And there the table stood,
Around which gathered all the band
Of loved ones—spread by mother's hand,
With such delicious food,
As only she,
It seemed to me,
Of all the world could e'er prepare,
For us who daily feasted there.

While here my bed was made,
Between whose sheets we nightly crept,
Brother and I, and sweetly slept,
Our prayers devoutly said.
O, sweet the bliss,
Of good-night kiss!
That she, so good, so tried, so meek,
Our mother left upon our cheek.

*One of the most striking illustrations of the truth of this sentiment, so tenderly expressed, is to be found in the case of the eminent London banker, Mr. George Peabody, a native of Georgetown, Massachusetts, whose long and most profitable residence in a foreign land had not alienated his affections from the home of his childhood or the graves of his kindred. In presenting to the board of trustees a church which he had erected in the town where his

mother was born, he said: "It was here that my mother was born—that mother whom, when living, I fondly loved, and whose memory I revere. Amid these scenes, though now changed by the lapse of *nearly a hundred years*, she passed her childhood and her youth, *and therefore these scenes must ever be to me consecrated ground*. For these reasons I erect here yonder church, which, I trust, may for *many generations* preserve her name and the remembrance of her virtues." Oh, how insignificant become all his princely donations to the London poor, that have excited the wonder of the world—and his munificent gifts to his own countrymen of the South, when compared with this humble, but sincere tribute to the memory of a mother long ago gathered to her fathers, erected amid the scenes of her childhood and youth.

STEAM PLOWING.

The "Brinly," the "Watt," the "Avery," and the "Collins" plows of to-day are certainly a vast improvement on the "scooter," the "shovel," and the "bull tongue" of old times. The former are as superior to the latter as the gorgeously furnished drawing-room car on a lightning express train is superior as a means of locomotion to the old stage coach jolting over a "dirt road" at the rate of three miles an hour.

But while we readily admit the progress that has been made, we regret to say that in this very matter of plowing we are as far behind our English cousins as the men who stick to the "bull tongue" are behind those who use the "Brinly." In Great Britain, we have seen it stated, there are now in constant operation over 1,000 sets of steam-plowing machinery, while as far as we know in the whole United States, there are not more than half a dozen steam-plows. Indeed, we only know positively of two—one in Louisiana on a sugar plantation, and the other somewhere in Illinois.

We claim to be a progressive people, we are certainly an inventive people, and yet, in the first and most important work in the whole range of agricultural operations we can learn an useful lesson from the Pacha of Egypt who cultivates 800,000 acres every year by steam machinery made in England.

A first rate set of steam plows, at a current cost of \$18 per day, can break, pulverize and subsoil from 15 to 20 acres, stirring the earth to a depth of from 15 to 18 inches, doing the work of 30 horses and doing it vastly better than horse power and manual labor could possibly do it, because the land is not trodden and

packed by the sole of the plow and the horses feet, but left precisely in the same condition as if it had been broken up with a spade to the depth of 18 inches, which is the most desirable condition for the healthy growth of any crop, promoting easy drainage, admitting warmth, air and moisture, and affording an infallible preventive of the evil effects of drought.

But it will be said, "we cannot use a steam-plow upon our stumpy, rocky land." That is true. But why should our land be either stumpy or rocky? Stumps can be extracted and rocks removed, and though we will admit that it is a very troublesome and expensive process; yet we are satisfied that the gain in the area of arable land, the greater facility for improved culture, and the increase in production, will in two years amply repay the cost. If we calculate the cost of clearing an acre of land "in the old way," that is, cutting down the trees and rolling and burning the logs, and then add the amount of annual loss from the untillable land occupied by the hideous stumps until they rot and fall away, and compare this cost with that of removing the stumps at once, and giving the whole surface to good, thorough cultivation, we are not at all sure that the latter mode of clearing is not the cheaper from the beginning.

We address ourselves of course to those who recognize the necessity of improved cultivation of our soil and the desirability of substituting machinery and a minimum of skilled manual labor for the mule and negro power of old times.

If our ground is left encumbered with stumps and rocks we must not only deny ourselves the use of the steam plow, but we are also deprived to a great extent, and frequently altogether, of the advantages of improved turn plows and the subsoilers. If we cannot get rid of stumps and rocks, we must continue to scratch along with a "twister," as patented by Elisha.

But again, it will be said, "a set of steam-plowing machinery costs \$6000 or \$7000 and what poor Confederate can afford such an outlay for a plow?"

We do not suppose that every farmer can own a steam plow "all to himself," nor if he could, would it be necessary except for the favored few who raise their 1000 bags every year. But the planters of a neighborhood could afford by combination to purchase one, paying for it in proportion to the extent of their arable land, and we believe that the sum which they now invest in plow-mules, corn and fodder, would be more than enough to pay their share of the purchase money.

Take the case of a large planter who works 50 mules representing a money value of \$12,500—the price of two sets of steam-plow machinery. No 50 mules that ever were foaled will prepare his land as these steam plows will do it, nor can they do it in double the time. It will cost \$4000 annually to feed these 50 mules, or within a fraction of \$10 per day. Calculate the cost of the laborers who drive the mules—we mean their wages while plowing—and it will be found that the inferior and slower process costs more than the thorough and rapid mode of preparing the land and cultivating the crop. Mr. H. E. Lawrence, of Louisiana, in a report on steam plowing in his State to the Agricultural Department, gives the following estimate of the cost per day of working the machinery by which 15 acres of the "toughest and most sticky" land, are "broken, stirred and torn up from 15 to 18 inches deep."

Labor of 4 men and 1 boy.....	\$5.00
14 bbls. coal at 65c.....	9.10
Use of water. cart and team.....	2.50
Oil, cotton-waste and packing.....	1.40

Current expenses per day.....18.00

He describes the machinery as follows:

"Two 14 horse-power double cylinder traction engines, each having self-moving and reversing gear, water tanks, steerage, with road wheels 22 inches wide, winding drum and patent, selfacting cooling gear, spuds, tools and tool boxes, with 800 yards of steel wire rope, one six furrow balance wheeled plow and one seven-tine pulverizer and subsoiler balanced on wheels.

"The engines are driven to the headlands where they stand on opposite sides of the field and haul those great balance wheeled cultivators or plows back and forth at a speed of 4 miles an hour, or faster than a man can walk.

"The engines, plows and the entire steam-plowing machinery are worked and managed with the greatest facility, going over bridges, and ditches, moving and turning as easily and speedily as a six-horse team. The old plantation hands very soon learn to run the machines, and after a few weeks are entrusted with the entire management, being divided and placed as follows: one man to each engine, who keeps the machine in order, does his own firing, greasing, etc.: two go with the steam plow, one to steer and one to aid in case of stumps or obstructions, and one boy, with a cart and team hauls the water and coals for both engines. Each engine consumes seven barrels of coal for a day of 10 hours."

In some of the roughest and stiffest lands in England the steam plow is almost universally used, it being the practice there for a man who owns the machinery to go from farm to farm and do the plowing for 12 shillings, (\$3) per acre,

just like the men who own threshing machines and horse powers who thresh the wheat and oats of a neighborhood at a specified rate per bushel.

We hope to see the day when the same practice will obtain throughout our country, when we shall have our land "broken, stirred and torn up from 15 to 18 inches deep," and when the face of our fields will not be disfigured by stumps and rocks.

In the frontispiece of this number will be found an engraving of a steam plow in operation.

For the Southern Farm and Home.

Reviving Exhausted Lands—Application of Fertilizers—Culture of Cotton and Corn—The Result of Manure and Good Cultivation.

BY S. W. BLOODWORTH, GRIFFIN, GA.

Mr. Editor:—I feel an abiding interest in the success of your enterprise, as well as of all others of like character whose aim and object it is to contribute in any degree to the relief of the present depressed and tax-ridden Southern planters, who of all men should be the most encouraged in their honorable avocation, as upon the farming interest depends the success of all other enterprises amongst us. The mechanic, the merchant and the banker must all derive their wealth and all they have from the planters, hence the great necessity of each farmer contributing his mite of experience to the agricultural papers which are mighty engines to disseminate the knowledge which is accessible to all the farmers in this broad land and which is printed and sent forth through your paper at such a nominal price that it is within the reach of every man to procure it and the important information which it contains can be obtained by the planter by perusing its contents in his leisure hours at noon and night, which give each subscriber the benefit of the various experiments of your contributors in the way of improvement in the preparation of their farms, for planting and cultivating in their various kinds of soil, the low as well uplands, for corn and other cereals, as well as for cotton—the all absorbing theme of the day. Having made some progress in experimenting in preparing the soil as well as fertilizing and cultivating it, I have presumed to offer a few thoughts, which I design for the benefit of those especially who are less experienced in the farming business than myself. The first idea I wish to impress is, the all important one of resuscitating our worn out, old lands. I say all important, for more reasons than one,

first, a large portion of the more desirable lands of Georgia have been cut down and much worn, and now that we cannot control labor as in days of yore, to clear up more fresh land, it is our duty and interest to bend our energies, with the labor at our control, to resuscitating our worn and tired lands. This can be done at comparatively small cost, when compared to the benefit derived, by the following process:

Turn over our sedgegrass fields while vegetation is green, say in the month of August, and then about the first of December turn them again and follow the turn plow furrow with a subsoiler. In this way you have your land pulverized ten inches deep, the sod being turned while the vegetable matter on it was green, and the green matter soon decomposes and forms a black loam. The second turning still aids the decomposition. By March, the next spring, the land will be in an exceedingly soft, mellow condition. Then, for a cotton crop, open a deep furrow and apply whatever fertilizers you may choose in the furrow and bed the land on it at least three weeks before planting, and be cautious that the plowman in bedding makes the centre of his bed immediately over the manure. If caution is not used in bedding the first furrow he will entirely cover the manure and the second furrow will make the centre of the bed say five inches from where the manure was deposited and not over the deep furrow in which the manure was placed, hence when you open the centre of the bed to plant cotton seed, your seed are deposited not over the deep broken furrow and manure, as it should be, to receive at once the warmth and nutriment designed by placing the manure there, but are planted on a hard bed without the benefit of the manure until the root springs out and comes in contact with it. In this way the complaint frequently comes up that "the fertilizer used by me was a failure." Where the caution above named is observed, the seed being distributed in the proper place, they germinate much earlier, and the plant comes up and grows off much stronger. Especial attention should be given to the early and frequent culture of the cotton, destroying the weeds and grass in their incipency so that all the strength of whatever fertilizer used will be applied to the cotton plant. This is the only way to derive the benefit of the fertilizer in its legitimate channel and to its fullest extent. The growth of the cotton plant, as well as the increase of early fruit upon the plant, can be greatly enhanced by early and frequent culture. I am fully satisfied that cotton plowed and hoed

five times in sixty days will yield ten per cent more than if it had only been worked three times in the same number of days. So much for the culture of cotton.

I will now give you some of my experience in the culture of corn last spring. I ditched out some branch bottom land that was quite wet, but after ditching it five feet deep, I thoroughly dried the land. In May I cleared it and broke it over three times with the subsoil plow, and then bedded it with the turn plow, and planted it in the water furrow and cultivated it well. It produced fifty to sixty bushels of corn to the acre without manure. A portion of the land, I manured as follows:

I distributed three hundred bushels of lot manure to the acre, in the water furrow, then bedded on that one furrow each side, and then planted the corn in drills in one of those furrows and dropped the corn ten inches apart, my rows being 45 inches wide. I also put in 150 pounds of Dickson's Mixture in the drill with the corn, but dropped it half way between the hills and covered with the hoe. I cultivated it well. When the corn was about four feet high a drought set in. I threw dams across the branches and backed the water in the ditches so as to irrigate the land thoroughly and kept the subsoil irrigated, until the corn was fully matured. The result was the astonishing yield of *one hundred and thirty seven and one seventh bushels of corn to one acre*. After paying all expenses in preparing the land for planting, cultivating, manuring, gathering and harvesting the crop, the one acre netted me *one hundred and thirty seven dollars and seventy one cents*. I communicate those facts and figures to encourage others to adopt the improved plan of farming—figuratively speaking, to change the old plan of planting ten thousand to make five hundred, to planting five hundred to make ten thousand.

It requires less labor and less outlay to do so than to follow the old plan of farming. Say you expend the value of one mule for fertilizers and apply that fertilizer to the land cultivated by one hand and one mule, it will make more produce than two hands and two mules would make on ordinary land without the benefit of the fertilizer. Hence the expense of the feed of one mule and the expense of one hand to plow the mule is dispensed with, while the yield of the land thus manured on half the amount of land the two hands could have cultivated, will be equal, if not superior in quantity and better in quality. Lands properly plowed and

well manured and cultivated, will make as much on one acre as three acres will without manure, and the ordinary culture.

Mr. Editor, I have extended this article much longer than I contemplated. I plead in extenuation for doing so, my great desire for the improvement in agriculture indicated in the article. Trusting at least that some one may be benefitted by it, I beg leave to subscribe myself with sentiments of high esteem.

FARM CAPITAL.

In an address made at a meeting of the Framlingham (England) Farmers' Club, near the close of 1869, Mr. Mechi, alluding to the great changes brought about through the facilities afforded by science, said that it was too much the custom to dwell on the advance which agriculture has made, rather than the actual defects of its present practice. He thought that attention was imperatively demanded toward increasing the food and employment of the people by a profitable and enlarged investment of capital. He considers most farms too large by more than one-half for the working capital employed, but does not object to large farms if the working capital is sufficient, say £20 per acre.

As an instance of what should be accomplished with proper means, Mr. Mechi cites his own "small" farm of one hundred and seventy acres—all arable land with the exception of fourteen acres of permanent pasture. He purchased his land in comparatively poor condition, in 1841, at a cost of £23 per acre. He invested nearly the same amount in drainage, roads, buildings, clearances and machinery. So that in his exhibit as tenant-farmer, he charges himself with an annual rent of £2 per acre. His capital as tenant, December 31, 1868, averaged per acre, is stated thus: Live stock, £6 10s.; farm houses, £1 1s.; tillage, manure, etc., £8 15s. 6d.; implements and machinery, £2 10s.; hay, corn, etc., unsold, £2 5s. Total per acre, £16 1s. 6d. The items for live stock and tillage may seem large, but the considerable amount invested in live stock, fed mostly on purchased food, is the key to his large and frequent crops and net profit; the large item of tillage, etc., arising from deep cultivation, and much larger applications of rich oil-cake and corn manure than are generally administered: These methods of outlay account for his production of forty tons of mangold per acre in 1869, and for his frequent production of forty-eight to sixty-four bushels of wheat. Although the season of 1869 was not a good one, his best two fields of white wheat produced forty-eight bushels per acre.

His statement shows a capital of about £7,800 invested in the farm, for which he charges a landlord's rental of £2 per acre, or nearly four and a half per cent. He employs also a tenant's capital of £2,720, from which he obtains a profit of more than £260, or nearly ten per cent. In a series of years this profit ranges from eight to fifteen per cent.

But as more outlay for live stock and purchased food is needed to maintain naturally

poor soils in the desired condition of fertility than is required on richer lands, his experience has convinced him that on such land as his own, he could do much better with a capital of £20 to £25 per acre. Many farmers in Norfolk and Lincolnshire employ a capital of £20 to £30 per acre advantageously.

In respect to the preparation of the soil, Mr. Mechi continues:

"To farm to the greatest advantage, the soil and subsoil, to the depth of three feet, should be well manured; now we only manure the top five or six inches. Our root and green crops can never be over-manured, for they feed in the deep subsoil, when in a fit condition. Market gardeners understand this well; and around the metropolis they easily grow seventy tons of mangolds per acre, and other crops in proportion."

These are his views upon the economical restoration of land.

"Poor land may be almost immediately made fertile by heavily folding with sheep, consuming £10 or £15 worth per acre of oil-cake, corn, hay, roots, etc., not the produce of the land upon which the sheep are placed, supposing that there should be a loss even of £8 to £5 per acre, great will be the after gain. This system requires capital; but where there is capital it is far cheaper than guano or other materials. Where my forty tons of mangolds per acre grew this year, the land was autumn-manured with shed manure, at the rate of £20 worth of oil-cake, etc., consumed for every acre manured, and some guano in addition. This is what I call capital farming, as well as farming with capital. It is the true way to make land pay."

On the 45,000,000 acres, round numbers, available for cultivation in the kingdom, Mr. Mechi estimates the land-owner's capital to average £33 per acre, with an annual rent of 25s.; while the tenant-farmer's capital can hardly reach an average of £5 per acre, calculated on this entire available area. The gross salable yearly product he estimates to average, on a liberal calculation, less than £4 per acre, being a total agricultural product of £182,000,000 to a population of 32,000,000, or less than £6 per individual inhabitant.

He regards it as a disgrace to Great Britain, that while 90,000,000 bushels of foreign wheat are required annually, about one-half, or 22,000,000 acres of the available acreage remains in primitive pasturage, producing a minimum of food, and employing a minimum of labor probably not more than 40s. to 50s. worth of food per acre, while their latent capacity is indicated by the fact that his own naturally poor soil he has frequently realized £15 to £26 per acre in grain and straw.—*Agricultural Report, January, 1870.*

DO PIGS PAY?—A correspondent of the American Agriculturist, in N. J. writes: "I have just footed up the proceeds of one brood sow, kept during the past year, and find I have received \$406.54, and have the sow still on hand. The pigs were kept and fed in an ordinary manner during the summer on milk, and aside from the poor corn, not more than 100 bushels of ears of good corn were fed." The pigs were sold at from 5 to 11 months old.

From the Agricultural Report, January.

COTTON AS A SURPLUS CROP.

The folly of planting all cotton, and buying all farm supplies, was exhibited on an extensive scale before the war, and has been abundantly exemplified since: 1. It is a precarious dependence; it is carrying an entire stock of very fragile eggs in one basket over exceedingly rugged roads. 2. It involves heavy expenses for transportation and commission on bulky supplies for men and animals of the farm. 3. It prevents the adoption of any system of rotation and the most economic means of fertilization. It is a folly that in 1866 and 1867 plunged thousands of struggling planters into utter bankruptcy.

The wisdom of the opposite course is well illustrated by the following extract from a letter written by a representative of a very large class, who found themselves at "the surrender" without money or a business, or the means of living—in this case a man with a large family of small children, Calvin C. Jones, of Wetumpka, Alabama:

I will now give you the history of my proceedings from the surrender to the present time. At the surrender I had ninety dollars in hard money. There were ten of us in family, myself, wife, and eight children. I had no provisions, but had two horses and one hundred and sixty six acres of poor pine land—plantation gone down. I went to work for what we could eat, as it was too late in the year to try to make a crop. The 1st of January, 1866, I went to work to make a crop. I took my hard money and bought provisions with it, and planted all my land, about fifty acres, in corn and pease. My neighbors wanted to know why I did not plant cotton; they said they could raise cotton enough on one acre to buy as much as would grow on five. I told them that the first thing with me was something to eat, and then I would raise some cotton. It proved to be a bad crop year, but I raised corn and pease enough to make my meat and to do me for the year 1867. I then planted about half my land in cotton and the balance in corn and pease. I made five bales of cotton, and corn and pease and meat enough to do me for the year 1868. I then sold my poor land for \$600, in three payments, and bought a plantation on the Coosa River, ten miles above Wetumpka, for which I promised \$2,000 in two payments. I and my children went to work; myself, and one son big enough to plow, and four small ones not large enough to plow were my force. We made 400 bushels of corn, and \$1,400 worth of cotton. I had corn, pease and meat to do me for the year 1869. My eldest son quit me and went to work for himself. I had one above eleven years of age and put him to the plow, and we have this year made 11½ bales of cotton, 800 bushels of corn, 800 bushels of oats, 56 bushels of wheat, and some potatoes, and 1,600 pounds of pork. During the last five years I have lost four head of horses; still I have not bonded any cotton. My neighbors that went to making cotton to buy corn and meat with are still at it, and they are just one year behind. They have to sell their

cotton before they make it at ten or twelve cents per pound, in order to buy meat and bread, and just as long as men pursue that course they will always be behind. I have not worked any freedmen at all, and I think I came out best, for those who do work them in this neighborhood generally come out losers, with difficulties and lawsuits. During the five years since the surrender I have not used any manures, as my means have been limited. If everybody, both white and black, would go to raising their own corn and meat at home we would be a happy people.

Drainage.

By deep and thorough drainage, the land is converted into a sieve. The rain-water falls upon the earth freighted with carbonic acid gas and ammonia. It is robbed of the valuable essence in its passage, and dismissed from your deep drains pure. More than this, every drop of water exerts a cleaving force on the land. It splits the ground into fragments, and thus forms a fine and friable tilth. Besides, wherever water goes air can follow, and the passage of water and presence of air bring the heat of the sun with them, and thus thorough drainage quickens the earth with warmth and enriches it with gases at the same time. Then why should these soil-forming processes be arrested at a depth of 6 or 8 inches from the surface? To look into the bottom of your furrows, one would suppose that you farmers were all devoted worshippers of the god Pan—not, indeed, the poetical deity of the shepherds, but that most impenetrable crust which is found at the bottom of your fields. Years ago, gardeners sent their sharp spades through this barrier, and thus increased the depth and productive power of the earth. Other conditions of climate and quality being the same, the productive power of the soil is in the direct ratio of its mass. There is not one of you that does not want more land for yourselves or your sons. I will tell you how to get it without any increase of rent or taxes—go deeper down for it. Steam has familiarized us with the term, horse-power. Now I wish to apply a similar mode of reckoning to the land. Its power of production can be measured by its depth in inches. By examining your tilths, we can tell whether your farm is a 4, 6, 8, 10, 12, 14, 16, or 18 inch farm. Every inch you add to your depth, you gain 100 tons per acre of working force. By making this deep tilth, such results as Mr. Mechi has brought before us, may readily be reached and the average produce of the nation be raised from 8*l.* or 4*l.* to 20*l.* per acre.—*Gardener's Chronicle and Agricultural Gazette, (London.)*

FEED THE FRUIT TREES.—It must be apparent to every reflecting person that the material round about a fruit tree, which renders important aid in the production of fine fruit of any kind, must necessarily be more or less exhausted after a vine, bush or tree has produced abundant crops for several successive seasons. For example: A large pear tree or apple tree will frequently yield from ten to sixteen bushels of

fruit annually. Many trees have produced more than twice these quantities at one crop.

A few seasons, the material that the roots must be supplied with, in order to develop fruit, will be more or less exhausted. For this reason fruit begins to fall; and the failure is often attributed to an east wind, or some mysterious atmospheric influence, when in reality, the sole cause is starvation, arising from an impoverished soil.

The remedy is to feed the roots of all kinds of fruit trees with lime, wood ashes, gypsum, chip dirt, bones, fishes, and anything that will renovate an impoverished soil. It is evident that fruit trees cannot produce fine fruit out of nothing, or out of such material as may be desirable for other purposes.—*Hearth and Home.*

LINSEED OIL-CAKE, OIL-CAKE, OIL-MEAL.—The seed of Flax, called linseed, is valuable for the oil expressed from it, and which forms the basis of our best common paints. Vast quantities are annually consumed, the seed being partly derived from this country, but chiefly from the East Indies. The seed is ground, then heated, and subjected to enormous pressure, which frees it from its oil, and leaves it in hard, rough cakes, somewhat less than an inch in thickness. This is the linseed oil-cake, or oil-cake of commerce, and most of that made in this country is shipped to England. It is of high nutritive value, and the manure of animals fed upon it is very rich. It is laxative in its action upon the bowels, if used in large quantities, yet may be fed freely without fear of pating sheep or cattle off their feed; on this account it is well to mix it with the feed of both cattle and sheep. For horses, nothing is superior to it as an alternative diet, if fed in small quantities, say a pint three times a day. It gives a smooth coat, and loosens the bowels. Fed to beeves, it should be mixed with Indian meal in the proportion of one part oil-meal to two parts Indian meal. Fed to sheep, the cake is usually broken up into a coarse powder, no lumps being larger than the end of one's finger. The secretion of milk is greatly promoted by it, and if not fed in too large quantities, no foreign flavor or oiliness is imparted to the milk. It should always be fed with bran, corn-meal, or some other provender, about in the proportions above named. Its nutritive value, compared to maize, is as 28 to 10, as shown by analysis.—*American Agriculturist.*

CHEAP AND DURABLE FENCE.—In June last a patent was obtained for a style of fence that promises to become very popular, especially where posts or lumber are scarce or dear. It is constructed by putting down durable posts twenty or thirty feet apart; boring one hole through them about three feet from the ground; stretching two strong wires through them; fastening them in the first post, but allowing them to yield in the second, until the space between the posts is filled with pickets, stood up between the wires, the wires being crossed between each picket to hold them to their places. The wires are then tightened, and fastened by a pin driven in the hole. The bottom ends of the pickets, after

being inserted into boiling pitch, are set in a shallow trench immediately under the wires. The pickets may be split or sawed, and of any height. No nails being required, and only one-fourth the usual number of posts, the saving will more than pay for the wire.

When to use Lime and Plaster.

Gen. Pierce, of Akron, a successful cultivator, contributes the following suggestions on this subject :

The value of lime or plaster, as a manure, depends upon the component parts of the soil to which it is applied. All land has more or less sulphuric acid in it, caused by the decomposition of *iron pyrites*. The presence of this acid may generally be known by the appearance of the soil, and particularly of the stones. If there is any iron rust, or *oxide of iron*, in the soil, or in the stones, or on the top of the water that filtrates through the soil, or if the water is *hard*, it indicates the presence of sulphuric acid.

If land on which grass seed is sown is "slow to catch" or sod over, or catches in *patches*, it indicates the presence of sulphuric acid.

If the roots of clover and herds-grass in the spring stand two or three inches out of the ground, and in detached parcels, with bare ground between, it is the work of sulphuric acid. On such land plaster is a positive injury.

If clover and tame grasses die out, and are succeeded by *wire-grass*, sorrel or sour dock, it is caused by sulphuric acid. Put on lime and keep off plaster.

The reason why plaster should not be used on land charged with sulphuric acid is, that plaster is composed of lime and sulphur, and applying that is adding more of that with which the land is already overcharged. On such land apply *lime*, which unites with the sulphuric acid, and forms plaster. The lime thus neutralizes the acid; and the acid thus neutralizes the lime, and forms a compound nutriment for vegetation.

The reason why the ground appears so hard where the earth is charged with sulphuric acid is, that the old stubble has been *eaten up* by the acid.

The sulphuric acid in plaster applied to land not overcharged with that substance, *decomposes* vegetation, and fits it for nourishing the living plants. When there is an excess of the acid, it *eats up* the vegetation, both dead and living. This is the reason why soils overcharged with acid are always deficient in vegetable matter. And soils free from it, have an excess of vegetable matter in a decomposed state.

The presence of this acid is the cause of sorrel and sour dock and sour grass. The land is literally sour, and Nature is trying to throw it from her stomach, through these excrescences.

The rule, then, is, if your land has too much sulphuric acid, or is *sour*, give it a good coat of lime; if destitute of acid, apply plaster.

SHEEP that are not more than six years old will cut so closely with their teeth that kernels of grain can always be thoroughly masticated. For this reason it will not pay to grind grain for sheep.

USE OF LIME IN AGRICULTURE.—The action of lime is two-fold : First, physical, and second, chemical. As a mechanical agent it opens stiff clays, rendering them friable, mellow, and more easily worked; chemically, it acts upon the vegetable matter of the soil and sets from those stores of valuable substances which, without the action of this agent, must have remained inert and useless. It also enters directly into the composition of plants, and in many varieties forms a large proportion of the weight of their inorganic constituents. It neutralizes certain acids which are often present in soils, rendering them useful to vegetation instead of being positively injurious, which they are in their original state. The existence of water in the soil, however, affects the action of lime very considerably. If the land is wet and undrained, lime will not exert the same influence which it would do in the case of thoroughly drained land. A greater quantity of lime is necessary to produce a given effect, and thus the neglect of thorough drainage entails a considerably greater expenditure in liming than would have been necessary, if the land was either naturally or artificially dry.—*Cameron's Chemistry of Agriculture.*

DEVELOPMENT OF CEREALS.—Mr. F. F. Hallett read before the British Association a paper "On the Law of the Development of Cereals." From continued observations and experiments, extending over nearly twenty years, Mr. Hallett said he had arrived at the following conclusions : 1. Every fully developed plant, whether of wheat, oats or barley, presents an ear superior in productive power to any of the rest on that plant. 2. Every such plant contains one grain which, upon trial, proves more productive than any other. 3. The best grain in a given plant is found in its best ear. 4. The superior vigor of this grain is transmissible in different degrees to its progeny. 5. By repeated careful selection the superiority is accumulated. 6. The improvement, which is at first rapid, gradually, after a long series of years, is diminished in amount, and eventually so far arrested that, practically speaking a limit to improvement in the desired quality is reached. 7. By still continuing to select, the improvement is maintained and practically a fixed type of the result.

THOMAS J. EDGE, in the Practical Farmer, says he had found that five bushels of whole corn, fed raw, made but forty seven and three-quarter pounds of pork; that five bushels, less the toll for grinding, fed mixed with cold water, made but fifty-four and a half pounds; but that the same quantity of meal, well boiled and then fed cold, made eighty-three and three quarter pounds. He says merely scalding the meal with boiling water fails to develop all the nutriment; and that he "fastens down the lid of his barrel until the pressure of steam gets into it, as high as five pounds to the inch in the barrel and steamer." A friend Edge is a very painstaking Quaker farmer, his experiments may be implicitly relied on as correct.

The Onion originated in Egypt.
Tobacco is a native of Virginia.
The nettle is a native of Europe.
The citron is a native of Greece.
The pine is a native of America.

Keeping Farm Accounts.

How much has been written on the subject, and how important in order to know anything of actual results; and yet, how few among all the mass of farmers ever think of doing it; how very few know any thing near what any crop or animal they raise costs them, or seem to care either. They mostly do as they see their neighbors doing around them, with very little method or calculation, and leave the results to accident. Ask a farmer how much grain he has of any particular kind, and he will most usually tell you that he does not know exactly, but allows or guesses there was about so much, as near as he can remember; cannot tell exactly, because he kept the tally upon the threshing machine, and forgot to take it off on his book before the machine left. Much less can he tell you what his whole year's crop amounts to, or what his whole expenses have been. Of course, we do not say that all farmers are so, because we know there is occasionally a systematic business man among farmers, as well as in other lines of business; but I take it they are on the exception and not the rule.

Now this ought not to be so; as a careful knowledge of results is just as important to the farmer as to the merchant, or manufacturer, or a railway company. Railway companies keep their accounts so accurately that they know to a cent exactly how much each locomotive and car costs to keep it in repair, and how much to run it—how much everything about them costs from month to month and year to year—not merely for curiosity, but in order to be able to detect all waste of time or material, or mismanagement of whatever nature.

Is not this kind of information just as important to the farmer? I think so, and I speak of it more particularly now because it is the beginning of the year, when all such matters most properly commence. A blank book of the cost of a few cents will do for years. And now, brother farmer, such of you as desire to know what you are doing, let me persuade you into an effort to keep farm accounts, for one year, at least, and see how you like it. Perhaps some State or county agricultural society, now they are rather giving up horse and girl racing at their fairs, will take into their heads to offer a few dollars premium for the best set of farm books; who knows what may happen in this progressive age? Try it, friends, and compete for these premiums, if offered; and if I happen to be appointed on any of the committees, I will do my best to help you all get premiums—of course I will.

A MILE.—The following exhibit of the numbers of yards contained in a mile in different countries, will often prove a matter of useful reference to readers:

Mile in England or America, 1,760 yards.
 Mile in Russia, 1,100 yards.
 Mile in Italy, 1,407 yards.
 Mile in Scotland and Ireland 2,200 yards.
 Mile in Poland, 4,400 yards.
 Mile in Spain, 5,028 yards.
 Mile in Germany, 5,866 yards.
 Mile in Sweden and Denmark, 7,288 yards.
 Mile in Hungary 8,800 yards.
 League in England and America 5,280 yards.

The Seasons.

When Spring unlocks the flowers,
 That paint the laughing soil;
 When Summer's balmy showers
 Refresh the mower's toil;
 When Winter binds in frosty chains,
 The fallow and the flood;
 In God the Earth rejoiceth still,
 And owns its Maker good.
 The Birds that wake the morning,
 And those that love the shade;
 The Winds that sweep the mountain,
 Or lull the drowsy glade;
 The Sun that from its amber bowers
 Rejoiceth on its way;
 The Moon, the Stars, their Maker's name
 In silent pomp display.
 Shall Man, the lord of Nature,
 Expectant of the sky,
 Shall Man alone, unthankful,
 His little praise deny?
 No! Let the Year forsake its course,
 The Seasons cease to be,
 Thee, Master, must we always love,
 And, Saviour, honour Thee!
 The Flowers of Spring may wither,
 The hope of Summer fade,
 The Autumn droop to Winter,
 The Birds forsake the shade;
 The Winds be lull'd, the Sun and Moon
 Forget their old decree;—
 But we, in Nature's latest hour,
 O Lord! will follow Thee!

BISHOP HUBER.

BOOK FARMING.—Those who think our cultivated lands must grow poor as they grow old, will find food for reflection in the fact, that not many years back the average yield of wheat per acre in England was about ten bushels—it is now over thirty bushels. Brains accomplished it.

Scientific Department.

Construction of Lightning-Rods.

BY PROF. W. LEROY BROWN, OF THE UNIVERSITY OF GEORGIA.

Before proceeding to give directions how lightning-rods should be made to be efficient, it may not be out of place to briefly enumerate the principles which determine the action of electricity during thunder storms. The theory generally entertained is that the Earth is primarily electrified negatively, and by its inductive action renders the clouds positive. A thunder cloud then, surcharged with electricity renders those parts of the Earth nearest to it of the opposite state, with an intensity proportioned to their proximity. When the cloud comes sufficiently near the elevated object, if it is a good conductor, a disruptive discharge takes place between the cloud and the elevated object, and thus equilibrium is restored. Hence, the greater the elevation of the objects, as tall trees, or church steeples, the more liable they are to be struck by lightning. In former days, before the discovery of the uses of the lightning-rod by Dr. Franklin, in some of the European towns bells were rung during a thunder storm under the prevalent belief that thereby the fury of

the storm was dissipated, and the dreaded thunderbolt averted.

Now thanks to our own countrymen, Dr. Franklin, the principles which control the lightnings of the heavens are well understood, and men know how with certainty to avert its fury. They know how to extract this pent-up lightning in the thunder-cloud, how to discern it, and render it harmless. For the chief function of the lightning-rod, is not to receive the dreaded thunder-bolt and carry it harmless to the earth, though it sometimes does act in that way, but it is to *discern* the cloud and to convey the electric fluid *silently* to the earth. The rod being a good conductor offers an unobstructed channel for the passage of the electricity and thus has a tendency to prevent any dangerous accumulation. It anticipates the danger, and does not allow a large amount of electricity to be stored up in the cloud. It safely and silently transmits it to the earth, as rapidly as it accumulates. It acts just as if you were to burn a charge of powder for a cannon, a grain at a time. In this case you could hardly detect the force, in comparison with the force developed by the combustion of the whole charge at once. So the pointed rod silently transmits to the earth a grain, as it were, of electricity, at a time, and thus in a short time withdraws the charge from the cloud, which if expended at once would manifest intense violence. To do this the rods must terminate in a sharp point. Now it is well known that electricity will not remain on any body that ends in a point. It accumulates on the point with such intensity that it passes off from it to the air, or to any other body near it, and if this body, as a thunder cloud, is of an opposite state, the electricities will thus intermingle, and the cloud be rendered harmless. We say such is the general tendency. But for our practical rules that should guide us in constructing an efficient lightning-rod:*

1. The rod should consist of round iron of not less than three-fourths of an inch in diameter. Iron is selected on account of its cheapness and its being a good conductor. A smaller size is in danger of being melted by the heat of a violent discharge from the cloud. Among the various patent rods, we have frequently seen a twisted copper ribbon used. There is no real advantage in this. On the contrary there is a greater tendency for the electricity to pass off the narrow edges to other bodies. Round iron, if sufficiently large, is preferable.

2. The parts of the rod should all be as thoroughly connected as possible by welding, or by screwing the ends well together by a coupling ferule. When the parts are screwed together cement or paint should be used to make the joints water-tight.

3. To protect the rod from rust it should have

*We are indebted here chiefly to an admirable article on electricity by Prof. Henry, of the Smithsonian Institute.

two or more coatings of black paint. Black is preferable because its base (carbon) is a good conductor of electricity.

4. The rod should terminate at the upper end in a *single point*. One point is better than two or more, because the electricity will accumulate with greater intensity on the single points, and hence have a greater influence in silently disarming or neutralizing the electrified cloud. This point should be made of a metal not affected by the weather, as a brass cone plated with platinum, secured to the end of the iron rod.

5. The rod should pass in the most direct course to the earth, and nowhere should be allowed to make a sharp angle. It is absurd to attempt to insulate it from the house. As the house is in a state of electrical tension and the object of the rod is to relieve that tension, it should be in as perfect communication with the house as possible. Were an attempt made to insulate the rod by glass eyes, as is sometimes done, there would still be communication through the earth, and then when wet by the rain it would not insulate it. If the house has a metallic roof, it should be connected with the rod by soldering slips of copper. Indeed, in this case, if the roof has a metallic connection with a pointed rod in the top, and the edges are connected with the perpendicular water pipes, and these latter well connected with the earth, no better conductors could be constructed.

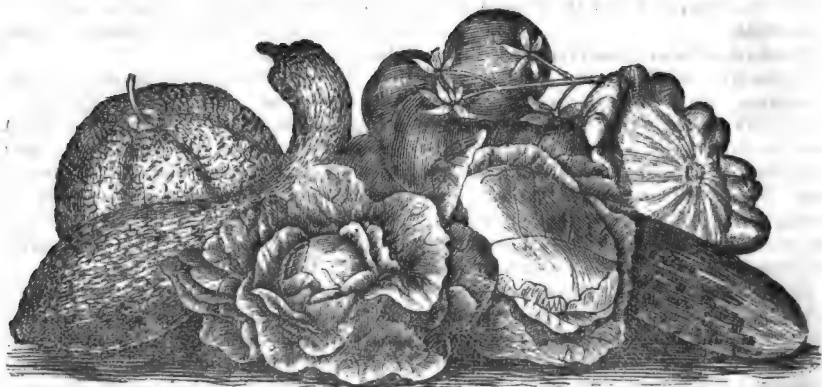
6. The rod must have a perfect connection with the earth. It should be bent at the ground so as to pass off from the house at right angles, and be buried in a trench from four to six feet deep and surrounded in the trench with powdered charcoal, or fastened to an iron or copper plate buried deep in the ground, or what is better, let the lower extremity of the rod pass into a cistern or well, or be connected with the gas or water pipes of the city.

7. If gas or water pipes are used in the house, they should have a metallic connection with the rod, otherwise, the perfect earth communication of these pipes would render their highest points more intensely electrified than the rod, and hence the discharge would be invited to them.

8. The rod should be placed in contact with the chimney from which a current of heated air ascends in the summer, and on that side from which storms usually approach.

9. The extremity of the rod should extend above the chimney at least half the distance it is designed to protect. It being generally admitted that a rod will protect a horizontal circular space described with a radius of twice its height. There can be no objection, and it is safer, in a large house to have a number of rods, provided they are all properly connected with the earth.

10. It may be stated generally that all large masses of metal within a house, should be connected with the rod. An iron house with vertical projecting points on the roof would be perfectly safe from lightning.



Horticultural Department.

THE VEGETABLE GARDEN.

As we are now probably safe from frost, vegetables of all sorts may now be planted. Snap and pole beans should be put in at once. Of the former, we know of no better varieties than the "Early Six Weeks," "Early Valentine," and "Early Mohawk." They should be planted at intervals during the season in drills, 2 feet apart. Of pole beans, we think that the "Large Lima," the "Giant Wax," and the "Horticultural" (sometimes called the "Speckled Cranber-

ry" or "Wren's Egg") are the best, earliest and most productive kinds. Plant in hills 4 feet apart each way, 4 or 5 beans in each hill and train round good substantial poles 7 feet high, firmly planted in the centre of the hill. In planting beans care should be taken to set the eye of the bean down.

Egg plants, Tomatoes, Pepper and all tender vegetables may now be planted with safety. Lettuce, cabbages and all plants that will bear removal can be transplanted.

It is a common error that after rain is the best time to transplant cabbages. They should be set out without rain, and if the roots of the plants are dipped in a thick paste of cow ma-



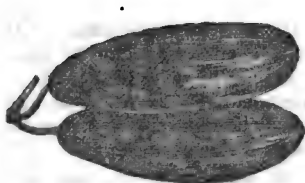
ENGLISH FRANK.



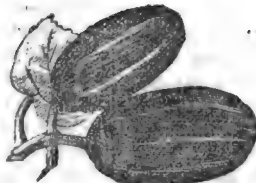
LONG GREEN.



WHITE SPINE.



EARLY CLUSTER.



EARLY RUSSIAN.



EARLY FRANK.

mure and woods earth, and planted after the sun goes down, they will do well.

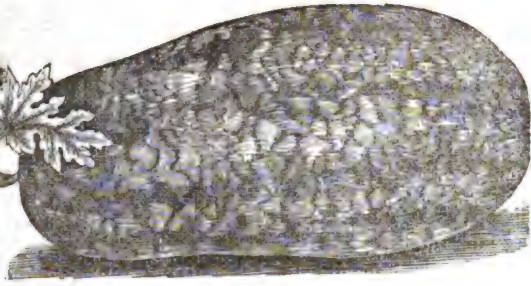
Now is the time to sow okra and celery. This latter vegetable it is supposed by many cannot

be successfully raised at the South. This is a great mistake. With a little care, as good, sound, white celery can be grown at the South as anywhere else in the world. Sow the seed now in drills about 8 inches apart, in a rich seed bed. Shade the bed in very sunny weather, protect against too cool nights and water frequently with a watering pot with a fine rose.

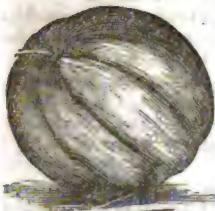
When the plants are three or four inches high, they should be planted in trenches 8 feet apart and about a foot deep, with abundance of rich loose earth at the bottom of the trench. As they grow draw the earth to them gradually, taking care not to allow the earth to get between the leaf stalks, and during the months of September and October earth them up well for



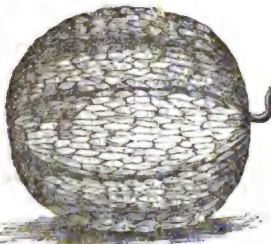
BLACK SPANISH WATER MELON.



MOUNTAIN SWEET WATER MELON.



WHITE JAPAN MUSK MELON



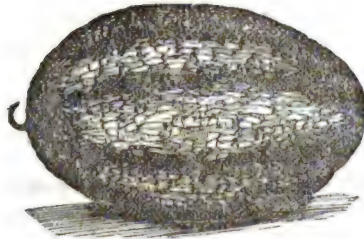
PROLIFIC NUTMEG MUSK MELON.



NUTMEG MUSK MELON.



GREEN CITRON MUSK MELON.



NETTED MUSK MELON.

bleaching. Many experienced gardeners, and among them Mr. Peter Henderson in his "Gardening for Profit," are opposed to planting celery in trenches and recommend that the plants be set in rich deep soil, earthing up with the hoe, and that in this way as solid and white celery can be grown as in the trenches. "Early Dwarf Sold White," and "Large White Solid," are the best sorts we have seen.

Cucumbers should be put in this month.

Plant in hills 5 or 6 feet apart. Make the hills very rich. Plant a dozen seeds in each hill, cover them about half an inch deep and when the plants are well up and out of danger from insects, thin to about three plants in each hill.

The "English Frame," "Long Green," "White Spine," "Early Cluster," "Early Russian," and "Early Frame," are all good varieties. On page 210 will be found an engraving of these various kinds.

Melons also, both musk and water, may now be planted. Plant musk melons in hills from 4 to 6 feet apart, leaving three plants to each hill. The most productive and best varieties of which we have any knowledge are the "White Japan," the "Prolific Nutmeg," the "Nutmeg," "Green Citron," and "Netted Musk."

Plant water melons in hills 7 to 8 feet apart. The "Mountain Sweet" and "Black Spanish," are excellent kinds for this section. The "Mountain Sprout," "Orange" and "Goodwin's Imperial" are also highly recommended, but we have never tried them. The engraving, page 211, will give a good idea of the different varieties above mentioned.

A light, rich, warm soil with a sunny exposure is the best for melons. Plant several seeds in each hill and when the plants have got their fourth leaf, thin out to two or three. Superphosphate of lime is an excellent manure for melons, hastening their maturity and increasing their size, and a little guano sprinkled in each hill at a little distance from the plant will not only be a valuable fertilizer but a protection against bugs and flies. When the vines begin to run they should be pinched at the extremities to make them bear sooner.

Continue to plant corn every fortnight for roasting ears.

Thin out carefully and thoroughly the young vegetables, beets, carrots, parsnips, onions, etc. This work should be done in time and not left until the plants are too old.

Plant English Peas for a succession. Now is a good time to plant Squash and Pumpkins, but take care not to allow them to be near your melons. They will assuredly contaminate them.

Keep the hoes going all the time to kill weeds and give the growing crops undisputed possession of the soil.

The Flower Garden.

We hope that nothing in the way of preparation still remains to be done in this department; that the soil has been well worked, is perfectly clean and light; that the edges have been neatly trimmed, walks gravelled and rolled, that the grass plots and borders have been evenly mown, that the hardy annuals have been already sown, and that everything is now ready to complete the floral display with which we trust every reader of the FARM AND HOME has resolved to surround his dwelling.

Now is the time to plant Dahlias. The varieties of this beautiful bulb are almost without number. They can be had from any reliable

florist for from \$2 to \$8 per dozen. The "Amazon," yellow with scarlet edge, "Andrew Dodds," very dark Maroon, "Ardens" brilliant scarlet, "Bird of Passage," white with pink edge, "Colossus," pale yellow, "Flamingo" bright scarlet, "Lady of the Lake" black with purple edge, "Goldfinger," deep yellow, "Hamel," red, "Pearl," white, "Purple Acme," purple, and "Lady Jane Ellis," cream white, tipped with rose, are beautiful kinds which James Vick of Rochester, N. Y., will send carefully packed for \$8.

For the convenience of our readers we subjoin a list of flower seeds which we can recommend, from which they may make their selection:

Hardy Annuals.—Adonis, Ageratum, Agrostemma, Alyssum, Argemone, Asperula, Calendula, (Marigold) Calliopsis, Callirhoe, Candytuft, Celosia, Centaureidum, Chlora, Clarkia, Convolvulus, Crepis, Delphinium, (Larkspur) Escholtzia, Eutoca, Gilia, Helianthus, Chinese Hollyhock, Kaulfusia, Lupine, Mignonette, Nemophila, Nigella, Nolan, Oxyura, Petunia, Poppy, Portulaca, Double Zinnia. Of nearly all of the above there are several varieties which bear flowers of different colors.

Half Hardy Annuals.—Amaranthus, Aster, (26 varieties) Balsam, Barton, Browallia, Caelia, Cleome, Gaillardia, Hibiscus, Linum, Malope, Marigold, Martynia, Mirabilis, Mesembryanthemum, Enothera (Obeliscaria), Phlox, (several varieties) Salpiglossis, Salvia, Scabiosa, Schizanthus, Sensitive Plant, Stocks, Tropaeolum, Verbena.

Perennials.—Antirrhinum (Snapdragon) Perennial Larkspur, Carnations, Pinks, Lobelia, Lychnis, Myosotis, Pansy, Sweet William Wallflower.

As the seeds of most of the above named flowers are very small and tender, it is essential to success that the soil be perfectly pulverized, free from clods and lumps, and not liable to bake after rain. A fine sandy loam is the soil for flowers. Sow the seeds on the surface and sift a little earth over them. With proper care, and seeds obtained from a reliable seedsman, there is little danger of failure.

THE ORCHARD.

Now is the time to fight the legion of insects which wage war on fruit. Death by burning to all caterpillars. The same by decapitation to all borers and worms of all sorts, and especially to the curculio.

Finish pruning all fruit trees. Cut away suckers. Where fruit buds are so numerous as to probably exhaust the strength of the tree in blooming and leave none for fruit, remove one half at least of the buds.

Dress the strawberry beds. Destroy all run-

ners. If the beds are old and need stimulating, a top dressing of good ashes sprinkled broadcast just before, or during a shower of rain will be of great benefit.

For the Southern Farm and Home.

PLEASURE GROUNDS.

BY THE LATE WM. M. WHITE.

The dwellings should be placed a few rods back from the street to be free from the noise and dust of the highway, and from the gaze of passers by in your parlor and sitting rooms; this will also give room for a fine lawn in which to place ornamental trees and flowers, and where the children may play in safety. Let it be in a dry position, and removed from any stagnant pool. Deepen the soil by trenching or subsoil plowing, if you would have your plantation grow freely.

Provide a good lawn of blue grass, and white clover, if it will grow in your locality; if not, take Bermuda, or whatever will grow best; a lawn is indispensable.

In a small village lot, the street gate should be directly opposite the front door. In a larger lot it is best to approach a little obliquely by easy curves, both with the foot-path and carriage road. Besides the main entrance belonging to the best apartment, there should always be a more concealed entrance to the kitchen, and back yard, shut out from the ornamental grounds of the place. The back yard, stables, clothes-drying ground, etc., cannot be considered ornamental, and for the comfort of the servants should be made private by belts, groups of trees, and vine covered trellises. Good walks should lead to the flower, fruit, and kitchen gardens, also to the arbor or other objects of interest within the grounds. Main walks should be from five to ten feet wide varying with the dimensions of the grounds and the buildings. They will be better if dug out a foot deep and filled in with small rocks and covered over with gravel—but this is not so requisite in our climate, except for the carriage road. Minor paths need not be so wide. Do not make a single needless walk, or road, or one that you cannot keep in perfect order and repair.

The carriage drive need not be naturally the nearest road from the highway to the house, but it ought to be made to appear so by employing artificial obstacles to change its course, and these ought to appear perfectly natural.

When an approach quits the high-road, it ought not to break from it at right angles, or in such a manner as to rob the entrance of im-

portance; but rather at some one of its curves, from which the gate may be more conspicuous, and where the public road may appear to branch from the approach rather than the approach from the road. The first view of the house should be from the most pleasing portion of the drive, and as soon as the house is distinctly visible, there should be no temptation to quit it, as the road will appear to do if at all circuitous; unless sufficient obstacles such as water or inaccessible grounds justify its course.

Before planting your trees, look out from your piazza, and from your parlor, and sitting room windows on the ground you expect them to occupy; see if there are any pleasant views in the surrounding country, distant hills, a sheet of water, a church spire, a pretty building, or a pleasant valley, then plant no trees that will hide or mar such prospects; but if there is anything unsightly, as a gullied hillside, or common plantation buildings, let these be hidden by a dense screen of trees. Neither let them be seen from the approach if possible.

When the middle grounds and extreme distance of the views from the drawing room front are varied and interesting, it is seldom best to introduce much ornament into the foreground, but if the former are tame, make the foreground as ornamental and inviting as possible. Ornament still more highly the foreground if the distant views are in any way disfigured or disagreeable, and shut off the latter by plantations. Lawns interspersed with trees, and shrubs, and kept in neat order with the scythe, should form the chief attraction of the scene.

It is best to surround your place with a screen of trees to protect it from the public gaze; it will not look then as if open to inspection from the street, but snugly sheltered among the trees and roses, it wears an air of peaceful seclusion. You may wear your old coat, or a shockingly bad hat, and romp with your children free from the stare and criticism of passers by. If a house has perfect proportions it looks best embowered in trees, but if not (and few have) it will look better partly screened by a drapery of shrubbery and vines. Let the encircling belts before the openings left for prospects be of low trees and shrubs which will promote the privacy of the grounds, and yet preserve the distant views. Let this belt be composed of mingled evergreen, and deciduous trees, mostly evergreen. Let the enclosure be a hedge of some sort. None are so pretty as the Holly, the Pyracantha, and the Macartney Rose. For utility the Osage Orange is equal to any of these, but

it is not evergreen. The Cherokee Rose is too troublesome to keep in order.

If in the grounds there is any point affording a pleasant prospect of the surrounding landscape, there build an arbor, and cover with vines, or plant trees and place beneath a rustic seat.

Trees are beautiful, either clustered in groups mingling their foliage together, or when standing singly and developing themselves fully on every side. If you have room plant several groups of different form and size. In one place the different varieties of the same trees together; in another different trees harmonizing in their leaves, branches, and general outlines; in another plant those which contrast strongly in the tints of their autumnal leaves. Look out fine groups in the forest and try to reproduce them on your grounds.

If your house is elevated, commanding an extensive prospect, it is more satisfactory to give different views through openings in the trees, than to have the same broad view from every part of the grounds. Reserve this for some single point, as the arbor, and the pleasure is much increased.

Between and in advance of your groups plant single trees, and do not cut away their lower branches. Let them grow in all their natural symmetry and proportion.

Select some for their graceful form, as the Willow, Maple, Elm, etc., others for their deep verdure, as the Linden, and Paper Mulberry, others for their blossoms in spring, as the Paulonia, and Pride of China, others for their brilliant autumnal colors, as Ark, Dogwood and Oak, others for the fresh, glossy evergreen leaves, as the Holly, Magnolia and Live Oak, others for beauty of proportion, and the fine color of their branches and twigs in winter.

Plant evergreens for the protection they afford, and their cheerful expression in winter. In this respect our Magnolias, Live Oaks, English and other varieties of the Laurel, Wild Olive, etc., leave nothing to be desired. Set them among your deciduous trees, plant them here and there, in masses, mingling the different shades of color. Plant the finest ones singly on the lawn. Do not cut off the lower branches for they are beautiful in proportion to their geometrical regularity.

Set the rarest and most delicate trees about the dwelling, and the larger and more common as you decide. Near the house let there be patches of unbroken lawn, and as you go let the trees approach nearer until they meet the

belts that compose the boundary, but leave vistas here and there for views from the lawn to the remotest part of the grounds, and let these include the most striking points, as a dell, an arbor or a favorite tree with a seat beneath.

Of shrubs, the larger may be as fringes to the belts, and groups of trees. Some arranged in masses by themselves, others separately by roads and walks. Plant beds of flowers near the walks. Twine climbing roses and honeysuckles over your piazza. Make your place in keeping with your purse and condition. Great establishments are great cares. Be content with tasteful simplicity.

Household Department.

DOMESTIC RECEIPTS.

BY MRS. WM. N. WHITE.

TONGUE TOAST.—Take a nicely prepared cold boiled tongue, mince it fine, mix it with a little sweet cream or new milk, if neither is to be had, use the beaten white of an egg, simmer the mixture, adding a little water, toast slices of stale light-bread, butter and lay them in a hot dish, cover each slice with the tongue mixture, and serve while hot, a nice breakfast dish.

BEEF CAKE.—Chop, cold roast beef, with a little fat bacon, or ham, season with salt, pepper, and a little onion, if to the taste; mix them well, and make into small cakes; fry them a light brown, and serve in a thick gravy.

VEAL RELISH.—Three pounds of veal, one pound of salt pork, chopped fine, season with salt, pepper, and spices, if preferred, also the juice and rind of a lemon. Press into a pan, and bake one and a half hours.

PLUM PUDDING.—One quart of milk, eleven soft crackers pounded fine, seven eggs, whipped to a stiff froth, one pound raisins, one wine glass of wine, one of brandy, the juice and grated rind of a lemon, one half cup of nice suet chopped very fine, mace, and other spices, with sugar and salt to the taste. If made, and baked properly, it will keep several days.

PUDDING SAUCE.—Take a cup of white sugar, and half cup of butter, work them together to a cream, then thicken a cup of boiling water with a teaspoonful of flour, stir this into the sugar and butter, adding a wine glass of brandy, and the juice and grated rind of a lemon. Sweetened cream is a favorite sauce for most boiled puddings.

SPOICED STRAWBERRIES.—Five pounds strawberries, four pounds of sugar, two tablespoonfuls of ground cloves, the same of mace; after cooking twenty minutes add one pint good cider vinegar, and boil as preserves. Red currants, cherries, raspberries and peaches are all very nice put up in this manner.

BAKED CORN MEAL PUDDING.—Take three pints of new milk and heat till it boils, then slowly stir in one pint of corn meal, remove from the fire, let it stand five minutes, then add a tablespoonful of butter, one pint good syrup, four eggs well beaten, half pound raisins, lastly, stir in one quart of hot new milk, and one pint sweet cream, also a little allspice, and grated nutmeg, bake three hours, or till of a light brown and not milky. Eat with sweetened cream.

PUDDING SAUCE.—One tablespoonful of butter, and one cup of white sugar beaten well together, then add one egg frothed, and a gill of new milk, make it in a bowl, set it over a teakettle of boiling water, stirring it constantly until heated through, then add one gill of wine and spice.

STRAWBERRY SHORT CAKE.—Make a nice light soda biscuit dough, roll thin enough, that when baked it will be about an inch in thickness, bake in a quick oven till a light brown, when done lay it on a platter, split it open, butter both halves, have ready your berries fresh picked and capped, with plenty of sugar and sweet cream, a sufficient quantity to cover the half biscuit on the platter, replace the other half, and your biscuit is ready for the table.

PRESERVING STRAWBERRIES.—This delicious fruit is so acid that it is not easily canned with a small quantity of sugar as other fruits, it is impossible to preserve the fine color, and high flavor without adding from half to three-quarters of a pound of sugar, to a pound of fruit. They preserve their shape and color better if they are only partly cooked in the syrup, and then allowed to stand in the sun a few days, but if cooked entirely by the fire, they should be put into jars while hot, and sealed immediately. Keep in a cool place.

STRAWBERRY WINE.—Press out the juice from the berries, and to each quart of the juice, add one of water, add good white sugar at the rate of one pound to the gallon. Put into a demijohn or barrel, in a cool cellar, and ferment in the usual way.

STRAWBERRY VINEGAR.—Take three or four quarts of strawberries, put them in a stone crock and cover them with vinegar, let them stand twenty-four hours, then strain this juice through a jelly-bag, and pour this on more berries, letting this stand another day, repeat this progress until you have the quantity you desire, add to each pint of juice one pound of sugar, put it into a porcelain preserving kettle and allow it to heat sufficiently to melt the sugar. When it is cold, put it into bottles. It will keep several years, a tablespoonful or two added to a tumbler of water in the heat of summer, makes a cooling and refreshing beverage, also highly relished by the feverish invalid.

TEA CAKE.—Take one pound flour, one pound of sugar, three-fourths pound butter, and ten eggs, cream the butter and sugar together, beat the eggs very light—the yolks and whites separately—leaving out the whites of two eggs, mix, and beat well, take one-third of the mixture and bake in little

heart-shaped pans, take another third and mix with it slips of citron, and bake in a square pan, with the remaining third put French currants, well washed, dried and rolled in flour, and bake in a square tin. Take a cup and half of sugar, to the whites you reserved, and make an icing for your cakes, which spread on while warm, and mark into squares or diamonds, with a knife to make it cut better. This is easily made, and will make two cake-baskets full for a small tea-drinking.

TO SODA EATERS.—It is asserted by celebrated dentists that the main cause of defective teeth is the extravagant use of soda, and cream of tartar in the manufacture of bread and cakes. Dr. Walker, a distinguished dentist, has published the results of some experiments made by himself. He soaked sound teeth in a solution of saleratus, and they were destroyed in fourteen days. With these facts before us, why will we persist in the excessive use of that which not only destroys the beauty of the face, but also takes from us that which our Creator designed should add to our health, comfort, and happiness?

Formerly, in a family of six, four whites, and two colored, we used from twelve to fifteen pounds yearly. But during the last ten years, we have scarcely used two pounds in a year; using in its place lime-water in all yeast preparations, and eggs in most cakes; eggs are far more delicate, and in no way objectionable, no matter if a little more expensive; better invest in eggs than in dentist's bills.

SEALING WAX FOR CANS.—Every housekeeper should make her own sealing-wax, as it is easily made, and convenient to have at all times. It is best to devote an iron skillet to the purpose. Proportions, one pound rosin, quarter pound beeswax, and two ounces tallow, melt it together, care being taken not to leave it a moment while on the fire. In sealing bottles and jars, cork closely, and dip into the cement, which makes them air-tight. The same wax will answer for grafting. Also for sticking plasters, provided there is nothing better at hand.

CREAM PIES.—Five eggs beaten to a stiff froth; and five tablespoonfuls of dry, white sugar, to a pint of good, sweet cream; add a cup of seeded raisins cut in half; and season with lemon extract and a little salt. Line deep plates with a good puff paste and bake till the cream is stiff set, so as not to be milky. This will make two pies.

MOCK APPLE PIE.—One cup of sweet light bread crumbs or soda crackers, two tablespoonfuls of sugar, one teaspoon of tartaric acid and enough water to moisten this well; pour the water boiling hot on to the bread, or crackers; flavor with any spice preferred; add a small lump of butter. This will make one pie. Bake with two crusts.

NAPLES BISCUIT.—One half pound sugar, one half pound flour, four eggs; drop on buttered paper or tins, sift sugar over them, flavor with lemon, bake quick.

COCOANUT PIE.—Take the white meat of half a large cocoanut, grate it and stir it into a pint and a half of sweet fresh cream; two beaten eggs, one cup of white sugar, a little salt; line the pie-plates with rich puff paste, and bake till the cream is stiff set, in a moderate oven. Eat as soon as cold. This will make two pies.

NONDESCRIBTS.—The yolks of four eggs well beaten, half teaspoonful salt, nutmeg to suit the taste, mix with flour to a stiff dough, work it hard, roll, and cut into fanciful forms and fry in lard; while hot sift white sugar over them. A good way to use up the yolks of eggs when making icing or delicate cake.

SWEET POTATO PUDDING.—Boil one pound of sweet potatoes very tender, when cool enough rub them through a colander, beat six eggs very light and add to the potato, also three quarters of a pound of white sugar, and the same quantity of good sweet butter, half a grated nutmeg, a few drops of lemon extract, and a glass of brandy. Line two large pie plates with rich puff paste, put in the mixture and bake half an hour.

SPANISH CHARLOTTE.—Put a layer of cake crumbs on the bottom of a pudding dish, then a layer of tart apples pared and cored, then a layer of crumbs, and so on till the dish is nearly full—the crumbs should form the last layer—pour a nicely prepared custard over it and bake; eaten with cream sauce. Any acid fruit may be used in the same way.

COCOA NUT CAKE.—Two cups of sugar, two of flour before sifting, one cup of butter, two tablespoonfuls of cream, and the whites of two eggs beaten to a stiff froth, add lastly a grated cocoanut; bake in two hours. If properly made and baked, it will be pronounced good by the most fastidious.

APPLE MERINGUE.—This is a simple dish, easily prepared, attractive in appearance, and a general favorite with all who taste it. Take twelve large ripe apples, pare, core, and stew them in just enough water to bring them to a soft pulp, strain them through a sieve, add a cup of white sugar, the juice and grated rind of one lemon, also a wine glass of wine or brandy, put it into a pudding dish, beat up the whites of two eggs, and add not quite as much sugar as you would for frosting, heap this upon the apple and place the dish in a moderately warm oven till it becomes slightly brown. Any other fruit may be used in the same way.

STONE CREAM.—Put a thick layer of jelly. or jam in the bottom of a glass dish, boil an ounce of isinglass in a pint of sweet cream, add a half cup of white sugar, flavor with vanilla or lemon, and when slightly cooled so as not to crack the glass, add a little brandy, and pour the whole over the jelly, set it in a cool place, it will soon be solid and makes a beautiful dish.

MOUNTAIN CAKE.—One pound of flour, one pound of sugar, one half pound of butter, six eggs

beaten separately to a froth, one cup of sweet milk, one teaspoonful of cream-tartar, half do of soda, flavor with vanilla. Bake in four cakes, and while warm put the cakes together as for jelly cake, but with frosting. Eat the day it is made.

DRESSED HOGS.—At a meeting of the Delaware (Ohio) Farmers' Club, the subject of slaughtering and dressing hogs was discussed, as well as the curing of pork. It was recommended that the hog should be laid on the back; that the party butchering should stand over the hog, left hand on nose, edge of the knife toward the hog; cut both arteries, three inches is sufficient, five is better, the main thing being to bleed well. Scalp as soon as killed—two hogs to one kettle of water; blood is a good test for the water; if too hot it curdles the blood; water should be soft; if hard throw in some ashes; some prefer pine tar or rosin. Throw a bucket of cold water over the hog as soon as scalded—it closes the pores and whitens the skin. When hung up, wash, scrape upwards, wash again, and wipe with a cloth; should be thoroughly washed scraped and wiped; heart or liver should never be cut in the hog; take entrails out to jugular vein, then take the vein, heart and liver out. The pork should be slightly salted for two or three days, skin down, and then turned and covered with salt; put in brine for thirty days for medium sized ham; brine should be preserved, old brine the best, but should be boiled and skimmed before used; salt should be well rubbed in; coarse salt the best, not safe to use salt in the bottom of the barrel after having stood for some time; eight pounds salt, five pounds sugar, and one-fourth pound saltpetre to one hundred pounds meat is the best recipe.

HOW TO FEED FOWLS.—Fowls are not fed for the mere sake of keeping them alive and healthy on the least possible amount of food. We wish to convert the food into flesh, or into eggs. In feeding for quick fattening it is understood that the poultry should be made to eat as much as possible. Our rule for feeding is to throw out the feed twice a day as long as the fowls will run after it and no longer. We are told, and it is our own experience also, that fowls thus fed will eat considerably more than if they can go to a feeding box and help themselves at all times. We want the fowls to eat; the more they eat, within reasonable bounds, the more eggs they will lay, the longer they will lay, and the better condition they will be in. Laying fowls should take exercise. If they can go to a trough and eat at any time they wish, they will take next to none. If they are fed but twice a day, they will hunt insects and wander much more. If fed soft feed such as wheat bran mixed with corn meal or ground oats, they will be hungry again in two hours after feeding, and be off after insects, etc. Give feed, then, only to adult fowls while they will run after it—soft feed morning, whole grain at evening. Keep them supplied with gravel, lime (plastering, or, better, oyster shells), ashes to dust in, and fresh pure water, some meat in winter, and they will be healthy and prolific.—*American Agriculturist*.

The Southern Farm and Home.

MACON, GA., APRIL, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - Editor

TERMS:

Single copy 1 year.....	\$3.00
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Single copy, six months.....	1.00
Invariably in advance.	

THE STATE AGRICULTURAL SOCIETY.—We learn from the newspapers that the Executive Committee of the State Agricultural Society at their recent meeting at Atlanta, have perfected arrangements for holding the next State Fair at Atlanta, on the 19th of October next, and seven following days.

The municipal government of Atlanta have engaged to provide the Fair grounds and all necessary buildings according to specifications as to accommodation and arrangement furnished by the Executive Committee, to pay all the premiums, to pay the salaries of the Secretary, his Assistant, and the Treasurer, to defray the printing expenses of the Society, to furnish an efficient police force for the Fair, to provide an office for Secretary, and pay the expenses of the Executive Committee when acting on business of the Society and during the Fair, and the Society gives the city all the receipts of the Fair, but not the annual fees of its members.

We think that this is a very judicious and satisfactory arrangement, displaying a commendable public spirit on the part of the city government of Atlanta, for which we hope that their city will be richly rewarded.

We hope that during the coming summer some enterprising citizen or citizens of Atlanta, will take steps to increase the hotel accommodation in that city. Let it be remembered that even Macon with all her advantages and her incomparable hotels, found it difficult to accommodate the visitors, and without disparagement of the Atlanta hotels, it must be said that they are not as good as those of our city, and that the accommodations of them all together are not equal to one of our hotels.

However excellent the Fair may be as an exhibition, if those who come to see it cannot get comfortable sleeping quarters, and good meals, they cannot enjoy it.

We trust that the Fair may be a great success, and it is on this account we venture to ex-

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press the hope that steps will be taken in time to supply the needed accommodation for visitors, which all will admit will not be found now in the Gate city.

Since writing the above we see by the Atlanta papers that Mr. Kimball of the enterprising firm of Kimball & Co., has bought Dr. Thompson's property close to the car shed, and proposes to build a large first class hotel which will be ready for the fair.

ENLARGEMENT OF THE FARM AND HOME.—

In consequence of the great pressure on our columns, and in order to give our subscriber as rapidly as possible the advice and information afforded by our contributors, we have determined to increase the size of the FARM AND HOME by giving eight additional pages, beginning with the present number.

PARTIES who send us letters or circulars, inclosing advertisements, if they wish them inserted, would do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we now have, are liberal enough.

REV. MR. QUIGG'S ESSAY.—We hope to publish in our next the Essay of the Rev. Henry Quigg, of Covington, Ga., on "the Policy Planters should pursue to protect themselves against the combinations of Speculators and Capitalists," to which the State Agricultural Society awarded a premium of \$100.

IT IS OUR PURPOSE, in future, to issue the FARM AND HOME on the 1st instead of the 15th of each month, believing that the change will be more satisfactory to our subscribers than the arrangement which has hitherto existed.

TO ADVERTISERS.—We beg leave to request persons who favor us with advertisements for the FARM AND HOME to send them so that they will reach us on or before the 15th of every month.

PERSONS sending orders for articles advertised in our Magazine, are respectfully requested to state in their order that they saw the advertisement in the FARM AND HOME.

SUBSCRIBERS and advertisers will please remit by postoffice order or registered letter. All sums so sent will be at our risk.

PREMIUMS.

The Publishers of the FARM AND HOME will give a premium of Fifty Dollars in money or books, selected from their catalogue, to the writer of the best Tale of Agricultural and Rural Life, and a similar premium of Fifty Dollars in money or books to the writer of the best poem, on the same subject.

The articles will be judged by a committee of three disinterested and competent persons in Macon, on the 15th June, 1870, who will award the prizes. All the compositions which are intended to compete for the premiums must be sent in sealed envelopes, together with the names of the authors, to the Editor of the FARM AND HOME, on or before the 31st of May, 1870.

All contributions so sent will be regarded as the property of the publishers.

Books, Pictures and Organs. Given Away.

As a reward to those who take the trouble to get up clubs of subscribers to the FARM AND HOME in their neighborhoods, and as an encouragement to others to engage in the enterprise, the Publishers have agreed to offer the following liberal premiums:

OUR PREMIUM LIST.

To any person sending us Three Subscribers and Six Dollars, we will send any one of Bulwer's and Scott's or Dickens' Novels, or any other book in our Catalogue, worth \$1 50.

To any person sending Eight Subscribers and Sixteen Dollars, a highly finished Picture, (Chromo) worth \$7 00, or books to that amount selected from our Catalogue.

To any person sending Fifteen Subscribers and Thirty Dollars, one or more Chromos, worth \$15 00, or books to that amount.

To any person sending Thirty Subscribers and Sixty Dollars, Books of the value of \$35 00.

To any person sending Seventy-five Subscribers and One Hundred and Fifty Dollars, a Parlor Organ, or a Sewing Machine, worth \$60.

To any person sending One Hundred and Fifty Subscribers and Three Hundred Dollars, an Organ worth \$180, or a Library, selected from our Catalogue, worth \$150.

Our Catalogue includes all the best Standard Books, Agricultural, Historical, Miscellaneous and Juvenile, Bibles, Hymn and Prayer Books, in all styles of binding, Photograph Albums, etc., etc. This Catalogue will be sent, postage free, on application to the Publishers.

TO CORRESPONDENTS.—All communications and articles intended for publication in the FARM AND HOME, as well as all inquiries to be answered in these columns, should be addressed to WILLIAM M. BROWNE, Editor FARM AND HOME, Macon, Ga., so as to reach him as nearly as possible on the first of every month.

Letters enclosing money for subscriptions and advertisements or relating to business matters, should be addressed to J. W. BURKE & Co., Publishers, Macon, Ga.

WE REQUEST subscribers not to send us local bills not current in Macon, or torn currency which we cannot use. Remit by Postoffice order, Registered letter or by Express.

CORRESPONDENCE.

BETHANY, Ga., Feb. 18, 1870.

Editor Farm and Home:—I hope you will not consider me presumptuous if I undertake to give you a little of the agricultural news from this quarter, as it is my first effort you will please excuse mistakes.

Farmers are very busy preparing their lands for planting Corn, of which crop I am pleased to state there will be more planted in this section this year than was the last, a few of my neighbors that have high light lands are now putting the seed in the ground by degrees; we are awaking from our stupor of "all Cotton and no Corn," thanks to your timely advice.

Our past sad experience has taught farmers that unless they plant more small grain and less cotton, they will not only remain poor, but the expense of making cotton will annually increase their poverty until their purses will be as flat as their hogs are thin.

Quite a majority of my neighbors have been unable to procure a sufficient number of laborers, and are consequently compelled to sow more oats, rye, and wheat than heretofore, in that respect I consider we are blessed instead of cursed, at least until we are all fully awake to the vital importance of raising at home more of our home supplies and necessities.

The article in this month's number of that valuable and always welcome visitor (the FARM AND HOME,) from the pen of that able writer and practical farmer, Col. A. J. LANE, has been perused with more than usual interest and is well worthy the consideration of our "plant all Cotton and no Corn" farmers. The proverb is "A word to the wise is sufficient," and we should endeavor to lay aside our prejudices and heed the wise advice contained in the article referred to, for "if we run we win" and if we plant more corn we increase our net profits instead of paying to corn merchants our year's earning to dispose of our cotton.

At some early day please to be kind enough to give us the best mode of planting peas among corn, whether in the middles, at the side of or between the stalks, and if there is any material difference in the yield.

A YOUNG FARMER.

[We are truly glad to learn that the good advice of our friend Colonel Lane has been heeded, and that the farmers of Jefferson county are devoting more attention to provision crops.]

In reply to the question at the end of our correspondent's letter we would say that in our judgment planting peas in the middle of the row of corn at the second plowing is better than planting at the side of or between the stalks. But we believe that sowing peas broadcast at the second

plowing is the best plan of all. The peas when up shade the roots of the corn and protect them against the hot sun, retain the moisture and do not interfere with the growth of the corn.—After the corn is gathered a good yield of peas can be harvested, and then, before frost, the vines can be plowed under and as much fertilizing power restored to the ground as was taken from it by the crop.—Ed.]

Culture of Oats.

COLUMBUS, Ga., Feb. 19th, 1870.

Editor So. Farm and Home:—I duly received yours of 12th instant, asking me to give you my experience with Oats, and what my Scotch farmer said about sowing them thick, so that you might answer inquiries made of you.

I gave my experience in the January number of the "FARM AND HOME." I now add what my Scotch farmer said about sowing them thickly.

When he came to superintend my farm, he was utterly ignorant of our corn and cotton crops, in fact, being fresh from Scotland he never saw either growing before, but he was raised a farmer, could do good plowing and when he came to understand these crops no one has better work done.

When ready to sow Oats the first time, after he came to live with me, I instructed him how to manure a field and told him to sow 5 pecks of Oats and plow them in with the manure. He stared at me with eyes and mouth open, and when he found speech said, "How do you expect a crop unless you put the seed in the land? 5 pecks to the acre!! I don't think I know how to sow so small a quantity, as I have always sowed 4 bushels in Scotland, and got 50 to 75 per acre."

I told him 5 pecks was the usual quantity here per acre, and the Oats would put out many shoots and make a fair stand, he replied, "Yea, I know that, but the main stem makes the Oats, besides you will have a coarse straw that your cattle won't feed on, but give the land the seed and you will get the crop of oats, your straw will not be coarse and your mules will eat it clean."

I liked his sensible remarks, but I could not give up at a word the universal practice, but agreed that he should sow 2 bushels to the acre and some little might try with 4 bushels.

The result proved he was right. That sown with 4 bushels was so far ahead of that sown with 2 bushels that I have increased it to 3 and $3\frac{1}{2}$ bushels and my next years sowing will probably be 4 bushels. I did not measure the results as I could not well do so, but the difference was largely in favor of the thick sowing. I am at this time applying the top dressing of 100 pounds Peruvian to the acre. I follow it with a heavy roller (the Oats being now 5 or 6 inches high with several leaves) which lays it all flat and looks like it would ruin it, but I have tried it before and believe it to be a decided advantage to the crop, it breaks the crust formed by the winter rain and thus it gets the only

kind of plowing practicable. I am careful however not to roll it when the top of the ground is wet, but wait for it to dry with the sun or wind. In 24 hours the Oats are again erect and grow off finely from the effects of the top dressing and rolling.

If I live I expect to report the results of my present crop to the "FARM AND HOME."

Yours truly,

W. H. Younge.

Critical Review of the February No.

MONTEZUMA, Ga., Feb. 22, 1870.

Editor So. Farm and Home:—I propose with your consent a cursory review of some of the most prominent articles in the February number. First, in point of importance, perhaps is the exhibit of "Profit and Loss in Planting," to which the scrutiny and investigation of practical minds are invited, with the request, that the errors be pointed out.

The most prominent error is the uniform valuation of 500 acres of land, without regard to the productive capacity. It is estimated at \$5,000.00 (Five Thousand Dollars) and this estimated cost of farm is the basis for calculation of profit, through five different tables or statements, exhibiting the production per acre of every variety of soil.

In 1st statement of result of a year's operation in which the estimated yield of corn is 5 bushels per acre and 1 bale cotton to 6 acres, the 500 acres should not be valued at more than 4 to 5 dollars per acre.

The same error runs through all the tables. The cost of land and outfit is estimated at the valuation of a first class farm, and the production of a year in statement No. 1 in 2, is of the lowest class of farm. Plenty of such can be bought remote from R. Roads and towns at 3 to 5 dollars per acre.

None of the statements are correct, i. e. verified by actual result, except No. 5. The price of land and cost of stock, are legitimate, and the result reasonable and attainable, and is doubtless a fair exhibit of profit on many first class farms for the year 1869.

The general deductions are sensible and cogent.

The question as to profits in the use of Guanoes, in dry seasons, I think is fully determined by the result of the past season—a year of almost unprecedented drought and heat—and yet all Guanoes properly used (and when I say properly used I mean deeply embedded beneath the drill on which the seed are to be deposited) paid a large per cent. on investment. I made on some of my oldest land from 1200 to 1750 lbs. seed cotton per acre, using 200 pounds Soluble Pacific to the acre.

I experimented with some half dozen different kinds of all which paid well. The Peruvian is best to increase the growth of weed.

MR. S. I. GUSTIN's deep culture will not do in the light sandy soils of S. W. Ga. Some of my neighbors seriously damaged their cotton during the drought of July and August last by deep sweep-

ing. I think Mr. G's "subsoil lifter" would have killed the plant, certainly would have caused the shedding of the fruit.

I saw an experiment in a field adjoining my place with a long shovel in the 3d plowing of cotton, which caused the shedding of nearly the whole of the first crop of fruit greatly damaging the yield of seed cotton and causing a rapid growth of the weed late in the season, too late to mature fruit.

Mr. Gustin's theory will do to make cotton weed but I do not think it will do to trust for the lint.

The article by A. J. LANE is sensible and timely, and should indicate the policy to be pursued by planters for the present year, but I do not think we need apprehend excessive production of our staple, and consequent decline in price; but large drafts for bacon, corn, guano, hay, etc., forcing sales, may bring a decline. Every farmer should raise his own corn and forage, and I would include bacon, if there could be any check to hog stealing. At present, under our system of permitting stock hogs to range our fields and creek and river swamps, where the freedmen with guns have also unrestrained privilege, raising is unprofitable—the most unprofitable of all farm productions. I have never abandoned the effort at hog raising, but since 1865 have lost from a half to two thirds of all that I have raised. In conclusion I would say to my planting friends, plant corn, plow deeply in preparing, cultivate lightly, and redeem yourselves from the reproach upon you—from the constant visits of your poor mules worn down in hauling corn from R. Road Depots, where they are seen in such condition as to reproach their owners.

CENSOR.

Horse Taming.

MR. JOHN C. WILLIAMS, of St. Clairsville, Ohio, asks us to inform him whether horse taming has been introduced to any extent at the South, what is the best season of the year for "introducing the art," and at what time planters would be "most likely to invest in such things." Mr. Williams says that he is a pupil of Rarey and desires to operate in the Southern States. We believe that generally our horses and mules are thoroughly "reconstructed," and obey the "gee" and "haw" with exemplary loyalty, but we cannot definitely answer Mr. Williams' queries. We give him, however, the benefit of this notice, and if there are any planters who feel inclined to "invest in such things" they can communicate with him and give him the opportunity he desires to "introduce his art."

Answers to Correspondents of Farm and Home

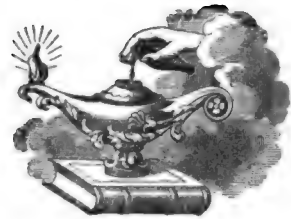
ALSIKE CLOVER.

A correspondent writing from Newton co., Ga., asks what we know about *Alsike* clover, which was "highly recommended a couple of years ago, and some of the seed distributed by the Agricultural Bureau at Washington."

The *Alsike* clover has a white flower and derives its name from *Alsike* in Sweden whence the seed were imported. It is said to be as strong as the red and as permanent as the white clover, and to make excellent hay. It needs a rich moist soil, does not grow as tall and is not as valuable for fertilizing purposes as the red.

We have not heard of its being raised successfully anywhere at the South, but we have seen several notices of it in Northern journals, which mention it as very valuable for stock. Any good seedsman will doubtless furnish the seed.

Literary Department.



EDITOR'S BOOK TABLE.

Among the heap of books, magazines and pamphlets which have accumulated on our table during the last month, the most valuable, entertaining and instructive is *The Life of Mary Russell Mitford, told by herself in Letters to her Friends, with Anecdotes and Sketches of her most celebrated Contemporaries*. Edited by Rev. A. G. L'Estrange, (Harper & Brothers.) By most readers on the continent of America, the authoress of that charming series of sketches called "Our Village," will be remembered, even though it is more than a quarter of a century since it first issued from the press.

The same keen knowledge of human character, the same refined humor, the same delicate appreciation of the good and the beautiful, and the same touching pathos which distinguished "Our Village" as one of the most delightful books in our language, are to be found in the letters which tell the sad history of the self-sacrifice, benevolence, and patience of the life of Miss Mitford. Mr. L'Estrange has done his work as editor with great skill and exquisite taste. He has given the world the best work Miss Mitford ever wrote, and has so woven together the scattered letters to friends, written without any idea of their publication, as to form as perfect an autobiography as she could have written.

The Evidences of Christianity, by Dr. J. L. Dagg, (J. W. Burke & Co., Macon,) is the best, most lucid and at the same time most comprehensive work on the momentous subject of which it treats that we have ever read. In one tenth of the space occupied by the great work of Dr. Paley, it contains all the vital truths which that renowned writer has presented to the student of theology, arranged with so much logical power, stated with such thorough mastery of his subject, and sustained by such erudition and historical research, as to convince the most confirmed sceptic who will read the book, that "Christianity is the religion which is taught in the Bible," and that "the Bible possesses the authority of God, binding men to believe the doctrines which it teaches, and perform the duties which it enjoins."

We commend the work to every household. It is handsomely printed on good paper, and neatly bound. The manner in which the printing and binding is done shows that it is not necessary for Southern authors to seek the aid of Northern publishers to bring out their works, and that they can find at the South Southern men who will do the work well and faithfully.

Barbara St. John, a tale of religious life by P. B. Chamberlain, author of "Isa Greame's World," (J. C. Garrigues & Co., Phila.) for sale by J. W. Burke & Co., is a pretty little book, well adapted for use in Sunday Schools and well worthy the perusal of Sunday School teachers.

The heroine of the story, is a young girl of inordinate ambition to whom success in life is the sole object of her existence, and whose only use of her many natural gifts and varied acquirements is to achieve position in the world. An interesting picture is drawn of a number of young men studying for the ministry, and the obstacles and encouragements, the thorns and roses of the life of a young minister of the gospel are well and pleasantly drawn.

Only Herself, by Annie Thomas. *Kitty*, by M. Betham Edwards, and *Wrecked in Port* by Edmund Yates, all from the prolific press of the HARPERS, are very readable, but not remarkable novels.

"*Only Herself*," is the best. The story, though in many parts, disagreeably out of the "common run," is well told, and the characters ably drawn, among whom, specially deserving of notice, is that domestic phenomenon, an amiable, affectionate step-mother.

Wrecked in Port is the story of a young lady,

(Marion Ashurst,) daughter of a poor clergyman who makes money and position her idols, jilts a young man of talent and character to whom she was engaged, (Walter Joyce,) marries a rich old man, (Mr. Cresswell,) and became as unhappy and as disappointed as she deserved.

Kitty has a strong resemblance to Mr. Yates' story. The characters, aims, plots and fates of the heroines of both are almost the same, so much so that there must be some "affinity" between the Marion Ashurst and the Bohemian, Kitty, who breaks her vows to the young painter and after many adventures marries a very mean and contemptible baronet (Sir George Bartelotte.)

Twisted Threads, by M. D. Nauman, (Claxton, Remsen and Haffelfinger, Phila.,) for sale by J. W. Burke & Co., is a very tangled web, but the story has real merit, and at the end the snarl is very satisfactorily unraveled.

Comfort's German Course, Harper & Brothers is a very good book. It is arranged in four parts, comprising both the scientific or grammatical and the practical or colloquial methods of studying the German language. It is very clear and concise, yet full of all that is necessary to the student, and is one of the best text books of the richest of all modern languages now extant.

My Ten Rod Farm, by Mrs. Maria Gilman, (Loring, Boston,) is a work worthy of the manufacturer of wooden nutmegs. It is a stupid, palpable fraud, written by somebody who is as ignorant as dishonest, and who takes good care to suppress the name of the locality where the "Ten Rod Farm" is located.

The author states that on a lot of ten square rods including the dwelling and outhouses, without any previous knowledge of floriculture, she has established a flower garden, hot-house, etc., which produce her a net annual income of \$2000. A "Mr. Felix" gave her a few seeds which she planted in pots. They "exhibited a tendency to run." She "shifted them from pot to pot till they were a yard long in a porous pot." At this stage of their growth notwithstanding the circumscribed limits of the pot they became "covered with small yellow flowers." Mr. Felix being asked by the unsophisticated Mrs. Gilman what she "should do with the flowers?" tells her to "let them alone and see what would become of them." After various shiftings, they were planted three feet apart in rich soil, and in June bore immense quantities of cucumbers! Mrs. Gilman spent an hour

every evening gathering and packing the fruit which Sharpedge & Co., took away every morning, and in August the innocent Gilman sent her little bill to Sharpedge & Co.

"To 3600 cucumbers at 8c. \$108.00," and Sharpedge & Co paid it!

We expect before long to see a work published somewhere in Yankeedom, showing how one square yard of ground can be made to sustain a large family and yield a handsome surplus income.

The March number of *The Eclectic Magazine of Foreign Literature*, (E. R. Pelton, Publisher, N. Y.), for sale by J. W. Burke & Co., contains several gems from the best English Periodicals, besides written notices of literary, scientific and art matters. The paper from the *Edinburgh Review* on the Duc D'Aumale's, Lives of the Condes, the Chapter from Froude's History of England on the Last Hours of Mary Queen of Scots, an admirable article on Mohammedanism from the Quarterly Review, and the Spectator's critique on Tennyson's New Poems, are the best of the collection. This number contains a good steel engraving of William Cullen Bryant, with a notice of his life and writings by the Editor of the Eclectic.

Lippincott's Magazine, for March, for sale by J. W. Burke & Co., has the following rich table of contents: I. The Vicar of Bullhampton. A Novel. Part IX. By Anthony Trollope. II. "Give Me a Pin and I'll Show you a Show!" By Prof. J. D. Bruns. III. Jim Lane. A Biographical Sketch. IV. The Coming Revolution in England. By Arthur Pember. V. The Stranger of Nahant. A Tale. VI. Dreams. VII. Villainous Saltpetre. By J. Franklin Fitts. VIII. Marble Faun-ing. A Tale. By Annie L. Macgregor. IX. The Vaudoux in St. Domingo. By H. Hargrave. X. Concerning Shelley. By Miss H. Pierson. XI. To-Day. A Poem. By Prof. Henry Hartshorne. XII. Errors of the Press. By Gen. James Wilson. XIII. The Forger's Bride. A Tale. By Rose Terry. XIV. Government and the Gold Premium. By Hon. Amasa Walker. XV. Our Monthly Gossip. XVI. Literature of the Day.

Harper's New Monthly Magazine for March is a very good number. The following are the contents: I. Pussy; II. Frederick the Great; III. Shadows; IV. Nature's Common Carrier; V. Broken Music; VI. South Coast Saunterings in England; VII. A New Judgment of Paris; VIII. Civil Service Reform; IX. Miss Ellington's Niece; X. A Brave Lady, (by Miss

Muloch); XI. Our Relations with England; XII. Jessie; XIII. Bolivar; XIV. On a Photograph of Athens, with the usual Editor's Easy Chair, Literary, Scientific and Historical Records, and the Editor's Drawer.

The paper on our Relations with England is understood to have been written by General Adam Badeau, the biographer of President Grant and ex *attache* to Mr. Motley's Mission to England. The temper of the article is very conciliatory. The "Common ancestry, language, religion," etc., (to which we think we have seen allusion made somewhere before) are invoked to prevent John Bull and Yankee Doodle flying at each others' throats, and from present appearances, we think that the "fratricidal combat" is as improbable as that any British Government will apologize to Mr. Motley for the sovereign exercise of the sovereign's prerogative in according belligerent rights to the Confederate States. The article is goodnatured, occasionally interesting, agreeably free from spreadeagleism, and not unfrequently inaccurate in its reference to men and things in England.

The *Edinburgh* and *Westminster Reviews* for January, (from the Leonard Scott Publishing Co.) are more than ordinarily interesting. The review of Froude's History of England in the *Edinburgh* is well worth the price of all Leonard Scott's reprints. It is a master piece of criticism.

The Georgia Collegian. We have received the first number of the *Georgia Collegian*, a periodical of eight pages to be published at Athens, Ga., twice every month by the members of the Phi Kappa and Demosthenian Societies of the University of Ga., and ably edited by Messrs. W. B. Hill and J. B. B. Smith, of the Demosthenian, and Messrs. Wm. A. Shorter and J. P. Hutchinson of the Phi Kappa Society.

The design of the *Collegian* is purely literary. It will contain news of the transactions of the University, the two Societies and matters interesting to the student, but will carefully eschew politics.

We wish the paper an abundant measure of success. The gentlemen who edit it are men of talent, culture and energy, and will doubtless make the *Collegian* a welcome visitor to the thousands of readers who, we sincerely hope, will subscribe for it.

The *American Agriculturist* for March is a valuable number of this excellent periodical.

The *Southern Planter and Farmer* (Richmond, Va., C. B. Williams, editor,) is also well

filled with useful matter for the farmer and horticulturist.

The March number of *The "Rural Carolinian"* is, as usual, promptly before us, and fully sustains its reputation. It has several interesting papers. "The Preparation of Land for Cotton," signed "Low Middling," is said to be from the pen of General Johnson Hagood, of Barnwell, "The Premium Cotton Crop," and "A Method of Planting and Cultivating Cotton," are well worthy of attention. Some hints on the Cultivation of the Castor Bean and Bene for oil, from the pen of Gen. E. P. Alexander, suggest another means of diversifying our industry. "Poultry Farming for the South," a beautifully illustrated article on the best breeds of Fowls, will be interesting and profitable to all who are fond of eggs and chickens. Articles on Sisal Hemp and the cultivation of the Banana commend themselves particularly to Florida readers. Charleston, S. C., Walker, Evans & Cogswell and D. Wyatt Aiken. Two dollars a year.

We welcome to our table and our exchange list, *The Horticulturist, A Journal of Rural Life, Literature, Art, and Taste*, published by Henry T. Williams, 7 Murray St., New York.

We have received a copy of the *Report of the Board of Trustees of the Agricultural College of Pennsylvania for the year 1869*. It is a very valuable document filled with instructive matter.

We are indebted to Messrs. Ferre, Batchelder & Co., of Springfield, Mass., for a copy of their beautifully illustrated catalogue of vegetable and flower seeds, containing full and plain directions for the cultivation of every known flower and vegetable.

Mr. David Dickson's Book.—We have received from the Publishers, J. W. Burke & Co., advanced sheets of a portion of a book on agriculture written by DAVID DICKSON, of Hancock co., which will shortly issue from the press, and will doubtless attain an immense circulation. Mr. Dickson's fame as a practical agriculturist, is sufficient guarantee that his book will be a success. It contains no theories, no abstruse technical terms—nothing that the plainest farmer cannot understand. It is the practical teaching of the author's own experience of many years, told in plain language for the benefit of all agriculturists.

It must be universally admitted that Mr. Dickson's "letters" have done a vast amount of good, and that to them is due, to a great extent, the improvement in agriculture in Georgia

which has taken place since the war. This book, so far as we can judge from the few pages which have been sent us, will give increased impetus to the good work, and convince the most obstinate believer in the "old way" that there is something to be learned from "book-farmers."

For the benefit of cotton planters we give the following extract from the book in the hope that its plain, practical advice may be universally followed.

COTTON.

Lay off the rows four feet; run the second furrow seven or eight inches deep; deposit the fertilizers intended to be used either with the hand or fertilizer sower, at the rate of four hundred pounds or upwards to the acre. With a long scooter plough run on each side of that furrow, and cover it up. Run the same plough in those furrows a second time, or the subsoil plough, if preferred. Use a good turn plough, and run on the side of each of those scooter furrows in each of those turning furrows, or a subsoil. Split out the middles with a large shovel, as deep as the horse will pull it. That finishes the bed.

When ready to plant, open with a small, short bull-tongue. Sow the seed with the hand or cotton seed sower—the cotton seed sower preferable. If the cotton seed sower is used it finishes the whole operation at once.

The earlier cotton is planted the lighter it must be covered.

Cotton may be planted from the first of April till the 15th of May. From the 10th to the 25th of April I consider the best time. You may plant, with high manuring, as late as the 1st of June. By extending your planting over the longest periods you can raise the largest crops, the bulk being put in about the 15th to the 20th of April.

In the first working of the cotton, side with a twenty-two inch sweep, with the right wing tolerably flat, going very close to the plant, not exceeding a half inch depth in the ploughing. It may be hoed by *scraping* with a sharp No. 2 Scovell hoe any time after ploughing. Leave two or three stalks in a hill, the width of the hoe being the space that the stalks should be apart. Some advantage is gained by keeping as near the middle as possible. You will be able to see what grass the plough left. The shaving of the grass with the hoe will act as a second working of crop. It will always be safe, if you can, to return to the cotton once in three weeks.

Side shallow, and close again the second time. Occasionally, to keep the surface very level, you may run the plough in the middle of the row. By leaving the proper periods between the ploughing, you may carry the point about the 1st to the 10th of August, which is a very good time to cease working cotton.

Cotton may be made with two to three ploughings. Four sidings and two middle splittings are all that it ever wants under the most unfavorable circumstances. The greatest amount of work the cotton requires is only ten furrows to

the row for all cultivation. The whole ploughing occupies just one and a fourth days' work per acre, under favorable circumstances; and it may be completed with three-fourth days' work per acre. It is essential that each of those ploughings should be done very shallow and close, never stopping for dry weather. If the ground stays wet, you may stop a few hours and hoe. The hoeing and ploughing during the cultivation of the crop closes up the land sufficiently to cause the fruit to set finely. At the beginning of the planting it was sufficiently porous for the roots to penetrate in every direction, and to any desired depth. The cotton plant is like the cultivated plum or cherry, requiring the land to be pretty close around the roots to set its fruit well, and prevent drowning in excessive rains. To cause early maturity the rows of the cotton should be one way four feet apart, and there should be from two to three stalks in a hill, at the distance of every nine inches. When the cotton fruit commences to bloom, each stalk will bloom and take on just as many bolls as if there were only three stalks to the yard. This system, stated above, will insure eight stalks to the yard, if hoed with care, which is one hundred and sixty-six per cent. more stalks than if one stalk is left for every twelve inches. By placing the stalks thick in the drill, and wide apart, the land is less shaded, and gets more light and sun. If you wish to shade with a given number of plants, the more equally the land is divided the more completely it is shaded.

Prepared, manured, planted and cultivated, as directed, there never has been any reason, any year, to prevent you from having a good average crop. This being the driest year I have ever known, has satisfied me of this fact, for I have a good average crop. If you pursue the above plan, and get three favorable weeks from the 20th of July, you will get a good average crop. Thin planting, as a general thing, latens the crop. If seasons have been regular, and the above directions have been carried out, the plant will be completely checked by the 20th of August, and need no topping. Topping is advantageous where we find the bolls have not come on soon enough, and if topped, should be done from the 5th to the 10th of August. In very rich land the distance between the rows may be from four to six feet; probably some of the Mississippi bottoms may want eight feet. No land is so poor that the rows of cotton should be nearer than four feet. If you have not land enough to plant as many rows as you wish, purchase more. A four foot row will make more than a three foot row; it is just as easy cultivated, if the season is favorable, and more easy if they are not.

Picking should commence as early as the cotton commences opening, and the cotton should always be sunned before the seed matures or hardens. If the crop appears to be large, it will have to be picked by the hands. Hurry them up; admit a little trash to increase the quantity picked. The falling off in price by picking a little trash is not so disastrous as to let the cotton stay and waste, and turn back for the sake of picking it clean.

To raise cotton for seed, the best bolting plants

should be selected that are on the plantation. Manure it well, and cultivate as directed above. Plant in it the most select seed on hand, and in working the cotton you should always pull up the stalks that prove unprolific, even if it makes a vacuum. When matured, from the second and third pickings, select the best stalks, those that have limbs sufficiently well to contain from six to seven bolls from a half inch to an inch apart. The best known variety to commence with is the "Dickson's Select," this variety having outlived every other in productiveness and popularity.

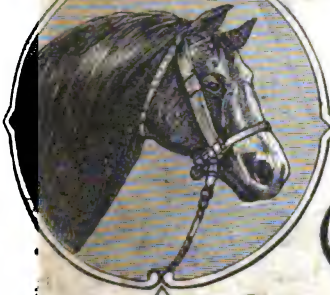
The cotton for seed should be picked when dry, and put up when dry. This will always insure a healthy plant. If the seed is partially damaged, the plant will continue to die out for weeks after it comes up, and sometimes fail even to make its appearance after sprouting.

I would select cotton for seed every year. Select enough every year to plant to make seed to plant the entire crop the succeeding year.

Rust is simply poverty of the land. This poverty is produced from various causes, such as wet lands that leach, lands that are too porous to hold water, that receive too much rain at one time and get too dry at another, and letting it get grassy so as to rob the plant of what little nourishment that is there. The hilly, sandy land can be improved by mixing with them a vegetable mold, and using a sufficient quantity of "Dickson's Compound" with surface culture. The wet lands have to be drained to increase their fertility. Red land and post oak land that are sufficiently dry need nothing but enriching; and the true system for everybody is, to make the land as near virgin soil as possible. I have never known in this section new lands to rust. The black prairie lands I am unacquainted with, but I understand they are liable to rust; but I believe the same system of keeping them full of vegetable mold up to the virgin standard, and the use of the "Compound" manure, would succeed in making cotton in them. The sulphuric acid that is in plaster might to some extent supply the place of carbonic acid that is deficient by long cultivation. The above is true in my practice. As to the black prairie land, it is a mere suggestion, but I believe it will succeed.

The heavier the cotton bolls, the more care is necessary, by previous preparation and manuring, to sustain the plant. The same care should be taken not to cut the roots of the cotton plant with the hoe, as is used to prevent their being cut by the plough, as the same damage would be the result in either case. Care should also be taken not to skin or bruise the shanks of the cotton with the hoe. The hoe should never be raised more than eighteen inches from the ground to hoe cotton. The hoe should be kept sharp, and grass should be cut just below the crown. Scratch out the word *chop*, and use the word hoe or scrape. This matures cotton earlier, and renders it less likely to be damaged by boll worms and caterpillars. By planting your cotton thick, and cultivating shallow, you dwarf it by the large number of bolls set on the plants, and render the plant less liable to caterpillars and boll worms.

Vol. I. No. 7.



THE
SOUTHERN

FARM AND HOME



MAY, 1870.
W. M. BROWNE, Editor.



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* * *THE POSTAGE on the FARM AND HOME is 3 cents a quarter ; 12 cents a year.

 For later Opinions of the Press—See Third Page of Cover.



SHORT-HORN BULL.

THE
Southern Farm and Home

A-MAGAZINE

OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

WM. M. BROWNE, Editor.

VOLUME I.

Macon, Georgia:

J. W. BURKE & CO., PUBLISHERS, PRINTERS AND BINDERS.

1870.

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SOUTHERN FARM AND HOME:

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FARM WORK FOR THE MONTH.

This is the busiest month in every farmer's calendar. He has now fully entered upon the great work of crop culture and crop making, and it demands his utmost care, skill, and energy to achieve success.

By the time this number reaches the readers of the *FARM AND HOME*, notwithstanding the backward spring and the many drawbacks to early operations, the planting of corn and cotton will have been generally completed, and the cultivation of the young crop will engross our attention.

CORN.

If the directions given in previous numbers in regard to the culture of corn, have been faithfully followed, the crop is now in condition to give but little trouble. If the soil has been properly pulverized, the first working with the hoe completed, and the crop thinned, there is nothing now to do but to keep it clean, and keep the soil mellow round the roots of the growing plants. The advocates of shallow after-culture insist that deep and close plowing should have been already done and that now when the young roots are spreading in every direction in search of food to supply the hungry and rapidly growing stalk, no plow should be run deep enough to sever or injure any of these sources of nourishment.

Those who maintain that deep after culture is essential to success pretend that cutting the surface roots does no injury to the plant and that stirring the soil deeply increases the storehouse

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from which the roots draw their supplies. We are strongly inclined to believe that the middle course between the two extremes is the wisest and safest to pursue. At this stage of the growth of the plants the plowing need not be as close as in previous working, but it should be just close enough to throw earth to the roots and cover the young grass, and deep enough to stir the soil and keep it soft and mellow. A medium between *scraping* and "lifting" is what we recommend.

When the plowing is completed the hoes should immediately go over the crop and kill the grass which the plows failed to reach. To give the crop undisputed possession of the ground is the thing to be achieved. All suckers should be now removed, and if in thinning any hills were omitted, let the surplus stalks be taken up.

COTTON.

Thinning to a stand is the work which now demands immediate attention. When the plants get their third and fourth leaves all surplus stalks should be removed. This work should be done with the utmost care, so that the plants which are left may not be skinned or bruised, and a healthy stand ensured. For the way the work should be performed, and for the distance to which the crop is to be thinned, and for the culture of the crop generally, we refer our readers to the directions by David Dickson, which will be found on the last pages of our number for April.

COW PEAS, DRILLED CORN, ETC.

Those who have been fortunate enough to secure a sufficient quantity for seed should now sow cow peas, broadcast, to make hay, and to turn under as green manure, or in drills or hills between the corn rows. Corn should be sown in drills for forage. Sow thickly, at the rate of about 8 bushels to the acre, in broad,

deep drills 3 or 3½ feet apart, and the richer you make the ground the better will be your crop. Cut the stalks as soon as they tassel and feed to your stock or cure for winter forage. Millet, one of the best and most profitable of all forage crops, may be sown in the same way, and if the ground is rich and well prepared, it will yield three or four cuttings during the season. The seed for these crops should be sown at once. If put off until hot weather comes, the growth will be spindling and weak.

Chinese sugar cane may be still planted for a syrup crop. It is sound economy to raise enough to afford syrup for home consumption.

WAR ON WEEDS AND GRASS.

Wherever you see the head of a weed or blade of grass in any of your cultivated crops, "hit it," with all your might. Do not skirmish with these deadly enemies of corn and cotton, but advance your whole line against them and destroy them before they entrench themselves behind works which you can never capture by any subsequent assault.

SWEET POTATOES.

As fast as your bed yields "draws" or "slips" plant them out in beds freshly made as before directed. This work should be done between 4 o'clock in the afternoon and sundown. Dip the roots of the slips in a thin paste of cow manure water and good mould. Make holes for them with a dibbling stick, pour about a gill of water into the hole. Press the earth firmly around the root (not about the *stem*) and draw a little dry earth round the plant when set. In damp or cloudy weather, of course the slips can be set out at any time, and no water need be used.

FENCES.

Look over all your fences. See that they are "horse high, ox strong, and hog proof." The high winds of March have probably damaged several panels, and unless these are reinforced, the roaming cattle and hogs of your neighbors will assuredly break through and steal.

TURNIPS.

If you want to produce fine turnips in the fall now is the time to prepare a patch by deep plowing, penning your stock on it, and by constant plowing during the summer, so that in August when you are ready to sow the seed, it will be deep and mellow and yield turnips which will be declared by the editor of your country paper to be the "biggest yet," and "not to be beat," and the dimension and weight of which will be duly chronicled.

For the Southern Farm and Home.

Soils—How to Analyze and Fertilize.

There seems to be a general impression that in order for the proper application of fertilizers to any given soil, it must first be analyzed, so as to detect the deficient salts, and have them supplied in the very doses needed. Never was there a greater mistake.

No two soils ever exhibit the same deficiencies, and the chemist might select a dozen samples from the same field, and find them to vary quite as much as the general average of soils from distant localities. Some soils naturally barren, may be deficient in certain elements which chemical analysis might develop, but these are exceptions to a very general rule.

All soils are acknowledged to be abundantly supplied with silica, alumina, iron, etc., nor does the fertility of a soil seem to be indicated by the quantity of these elements existing in it, as some of the most fertile soils have as high as 95 per cent. of silica for instance, while others have not more than one fourth that amount.

Chlorine, phosphoric and sulphuric acid exist more sparingly in soils than any other of the inorganic elements. But as chlorine and sulphur enter very minutely into the composition of plants, it would take many years for a soil originally fertile to become exhausted of these elements. Phosphoric acid however being a main component of all seeds becomes first exhausted from all soils which bear successive crops of grain, cotton, etc.

Of the organic elements nitrogen is the sparsest and first exhausted from soils. Though supplied largely from the atmosphere, it is a very necessary element of fertile soils, and an essential ingredient of a good fertilizer.

If then we examine the soil of a field which has become barren from long cropping, we will find, 1st, the organic matter exhausted or nearly so; 2d, the nitrogen in extremely small quantities; and 3d, the phosphoric acid existing only in combination with lime, alumina, magnesia, etc., as insoluble phosphates. The application of these deficient elements, without the addition of any other, would produce the most wonderful effects, as we have repeatedly tested, especially in the production of cotton.

M. George Ville, (while admitting the inutility of analyzing soils to show their deficiencies) proposes a plan which is much more tedious and quite as expensive as chemical analysis. That is for every farmer to try by actual experiment a system of fertilizing with nitrogen, lime, potash and phosphate of lime, and thereby

test the deficiency of his soils by the inductive system.

We beg leave to suggest that all fertile soils have the inorganic elements in proper quantity, existing in them. The true method of analysis then would be to determine the difference between the primitive and the exhausted soil. As repeated analyses have shown these deficiencies to be organic matter containing nitrogen and phosphoric acid, it is *prima facie* evidence that the absence of these makes the soil sterile. Their reapplication would restore its fertility.

While then, there are isolated cases in which even silica might be advantageously applied to a soil, and while lime, magnesia, potash and soda, all aid in most soils to bring them up to a higher standard of production, they only rank as ameliorators of the soil and not as fertilizers. To this class belong the soluble phosphates and nitrogenous substances. Some of the acids and alkalis are valuable adjuvants, but act more as solvents than as food to plants.

The new lands of this country differ from the old arable lands of Europe, in the fact that other elements have been exhausted from them by the cropping of centuries, and M. Ville's experiments will apply there better than here. Where he puts potash and lime as essential to what he calls complete manure he should confine himself to his own soil. What would he say of the calcareous soils of lower and upper Georgia which have lime enough to last thousands of years, or the felspathic soils of Middle Georgia which have potash enough to last for centuries to come?

The true system of analyzing soils then, is a very simple, inexpensive process. 1. Ascertain the elements existing in the primitive forests. 2d. Those which have been exhausted from the fields by cropping. The difference constitutes the requisites to return the soil to its original fertility. This is the true philosophy of the analysis of soils, and upon this is predicated the value of nitrogen and phosphoric acid in the fertilizing system so extensively adopted in this and other countries; and he who adheres to the old notion of analyzing every soil to find a manure adapted to it is still groping his way through the misty days of Sir Humphrey Davy, and the early agricultural chemists.

E. M. PENDLETON.

Sparta, April, 1870.

FARM IMPLEMENTS.—Only the best should be used; the cheapest are always the most expensive. Constant reading of Agricultural books and periodicals, and frequent interchange of thought be-

tween neighbors are necessary, in order that all may know what is best, because of the constant improvements being made.—*Extract from Proceedings of Randolph Farmer's Lyceum.*

Protection of Planters Against Cotton Rings and Speculators.

BY REV. HENRY QUIGG, COVINGTON, GA.

This is a question of prime importance. It is a well-timed and weighty problem. Its correct solution, beyond a peradventure, involves the best interests of the State. As a people we are poor and dependent. The accumulated wealth of ages has been swept away. One of the fairest portions of the globe has been impoverished and spoiled. Weakness tempts aggression. And where gain is the stake, with what facility do moneyed combinations burst through mere moral barriers to seize the prize. The late gold bubble in the Commercial Metropolis of the nation shows but too plainly the fell spirit at work among her moneyed lords to aggrandize themselves upon the ruin of others. And now to prove that the planter is fleeced and victimised by Cotton rings were a work purely gratuitous. No man of intelligence doubts it. Every farmer feels it. And with crops mortgaged for sums payable at an early day in the fall, independence of money rings is impossible. Regardless of the true value of the staple, speculators will buy the commodity which necessity forces upon the market, at their own prices. The poor planter disarmed and helpless must surrender at discretion. A ready solution for this evil may appear in declining to accept farther loans and in every planter working within the circle of his own limited means. Such action, however, would amount to cutting, not untying the Gordian Knot. To argue against the wisdom or necessity of the Planter in his poverty-stricken condition, contracting debts is simply an absurdity. As money makes money, and as "out of nothing, nothing can be made," capital will and must be sought, debts must be contracted and mortgages given. What! Shall the poor man raise a crop on the air; or shall the wealthy few have the exclusive monopoly of the cotton plant? Under such a system would not the rich, as in European countries, become richer and the poor poorer from year to year. What but the lack of capital growing in part out of absenteeism blights Ireland with the pall of poverty—a country famous for its beauty and fertility, the first flower of the earth and first gem of the sea. Would not such a remedy superinduce a greater evil than the one sought to be avoided?

Despite the dreams of the theorist, with such remunerative prices for the great Southern staple and in possession of such wide fields of fertile soil, planters will not and should not lessen their agricultural operations. Not contraction, but expansion, should be the order of the day. But serious obstacles at present impede our onward progress. We writhe under a financial tyranny. With our other property Banking Capital has vanished. Our Southern merchants and bankers receive the greater part of their working capital from the North. This capital is doled out with stinted hand on short time. Take the city of Augusta as an example, and by one judge all. This city uses now about 500,000 dollars against 5,000,000, which she controlled before the war. Accommodation by its banks may now be furnished for 80 days, and that only to a favored few at heavy interest, whereas, anterior to the war every respectable merchant and cotton buyer could obtain indefinite credits at merely nominal rates. I mean that when a merchant's bill matured at a bank he could renew the draft or borrow from another bank to meet that payment. Such however, is the financial condition of the country now, that the merchant himself being comparatively moneyless, doing business on the capital of others, and receiving no indulgence himself, he can extend no favors to the planter. The result is when his mortgage matures his cotton must be sold in obedience to the dictum of the New York Cotton ring which has supplied the funds. And this order of things has been inaugurated among them, be it observed, not from any want of funds on their part, for never was the North so abundantly wealthy before, but for the express and deliberate purpose of controlling both the shipping and price of cotton. This ring takes the staple just at whatever prices it may deign to give. No intelligent merchant will deny that cotton rises and falls in the South in strict obedience to arbitrary instructions issued from Northern head quarters. And then, per force of this New York money power, the staple instead of going direct to the factories of the world, is forced through a circuitous and unnatural channel, at an incredible aggregate expense to the producer. Between these rings and the manufacturer the understanding is perfect. By such combinations and "tricks in trade," millions are extorted from the weak and needy South to strengthen the power and augment the wealth of the North.

The presentation of these facts opens the way for the inquiry how shall this intolerable and growing evil be remedied? How shall the

Planter in his present poverty be protected against these remorseless cormorants?

After canvassing various plans, we are prepared to submit, as the result of much thought, two schemes, the one supplemental of and auxiliary to the other, through which the South may ere long burst her fetters and effectually protect herself against all adverse combinations.

The first is to change the channels of trade by establishing a steam line between Savannah and Great Britain, and having opened a direct highway between the two nations, ship our cotton to English markets (except in case hereafter indicated) and procure our advances from English capitalists. In order to present this idea fully, suffer me to enter into detail.

Imprimis: let the Legislature appoint a responsible man in every county whose business it shall be under oath to approve the liens of needy but worthy citizens. The Legislature—then, through its proper functionary, should endorse these liens to the extent of their half or full value, as in their wisdom may seem best. Some distinguished gentleman of experienced financial ability should be elected by the Legislature to leave for Europe by a certain day to negotiate these liens to such capitalists as will accept them on the most favorable terms. Stipulating that all the mortgaged crop or as much of it as may be necessary to cover the lien shall reach Savannah by a specified time for shipment to England, or should the Planter on any occasion for good and sufficient reasons prefer selling at home, that the lien shall be satisfied in cash by the fixed day, or before it, without prejudice to the capitalist. And stipulating still further, that the planter having forwarded his cotton to Savannah or any other of our nearest ports indicated, that the British capitalist shall carry our coming crop direct to England—and that he, the borrower, shall obtain reasonable advances upon it from time to time, at the minimum of British interest, holding his cotton at pleasure and settling all his liabilities when in his judgment the English market shall have reached its maximum. By securing English bottoms to carry away whatever cotton may be thus furnished the scheme may go immediately into operation and direct trade at once be inaugurated between our own ports and Great Britain. During the coming year there may be no absolute necessity for a regular line of steamers, as vessels can be telegraphed and furnished as circumstances require. In order that the contemplated regular steam line may be fully established as early as possible the State Agricultural Society should by resolu-

tion request the Legislature to make a suitable appropriation at its first session. This appropriation may be used in co-operating with a British Steam Company. To supply funds for this laudable end, bonds of the State should be issued.

In regard to sending a man to England to negotiate the loan, I would further observe that if after due investigation it should appear manifest that all the contemplated advantages of sending a deputy to England could be secured through the agency of some eminent merchant of Savannah now doing business with English capitalists, then the employment of said deputy would be unnecessary. But, should it appear proper to send him, no citizen however independent need complain at the small sum necessary for his expenses, as relief from cotton rings and the increased price of the staple will furnish an ample indemnification. Apart from this consideration, which of itself should be satisfactory, it is made our duty by a high authority to look not merely on our own things but bear one another's burdens.

Farther, I have deliberately suggested that the planter reserve the right of satisfying his lien in cash in order to afford him the advantage, if he choose, as soon as his cotton may be ready for the market, to sell to the Northern speculator. Under this scheme competition will spring up for the cotton crop between old and New England. Cotton will run higher than ever before and the result may be that the North will pay us at our homes more for our staple than we could realize in England, to save themselves from purchasing their supplies in that distant country under the monopoly of British merchants. And we doubt not that in the long run this will be the unavoidable issue of the scheme. England, instead of the South, may become their principal market for obtaining supplies. The tables will be completely turned, affording to them and to the world a stunning proof that vaulting ambition overleaps itself.

But, now in order to protect the State in its endorsement, and the capitalist in his loan, the liens must be made out in duplicate form, one for the State and another for the lender, and upon the presentation of the latter to the proper authority, the former shall be null and void. And further, when the merchant, capitalist, or agent, receives the cotton for which in part or whole, he holds the lien, the proper functionary of the Government must be duly notified to this effect. Suppose all the liens given are made due the first of May, then as many of the planters as shall have delivered their cotton to the

merchant or his agent at that date, may be regarded by the Government as having virtually, though not formally, satisfied their lien. Those who sell at home, satisfy their lien, and present it at the above date, will, of course, have their indebtedness entirely cancelled.

Through this course of action, the borrower, should he sell in the Southern market, will be spurred on by the vigilant authority at home to satisfy his lien against or before the appointed day, and the Government will be enabled to tell at any time her exact responsibilities.

And now in regard to securing the loan, no difficulty need be anticipated. We can furnish, as we have seen, not only ample security, but also the proper incentive. British capitalists hold millions of U. S. bonds. These, according to the enactment of Congress, they can deposit with the Department at Washington, receiving in return for 100,000 dollars in bonds, 90,000 dollars in Treasury notes, (commonly called greenbacks) and 7 per cent interest on their 100,000 dollars in bonds. For our loan, we can afford, if need be, to pay 10 per cent, thus realizing to the capitalist nearly 17 per cent. With such security then, as the endorsement of the State of Georgia, British capitalists who receive as their maximum interest at home only 4 per cent, will readily accept the offer.

The first part of the scheme is now sketched. Let it be perfected and adopted and the relief sought from the grinding oppression of Northern speculators will be obtained. We will be saved freight from Savannah or Charleston to New York, with all the other attendant expenses of drayage, wharfage, etc. We will enjoy all the advantages of direct trade with Europe, and open up a highway for emigration to our shores. We will obtain the full market value of our products, while at the same time we build up our Southern cities. Our own Savannah will sit like a queen on the waters of the South. With all present disadvantages her exports surpass all her sisters on the Eastern coast. And the enrichment of our cities will be to the State in its remotest parts what a well filled stomach is to the extremities of the body. Longer delay in this important matter strikes us as something akin to criminality. The present superciliousness of the New York cotton rings in furnishing their Southern cotton buyers with \$500 and \$1000 bills as their smallest change must surely be considered the last straw on the camel's back. Self respect, apart from self-interest, demands our promptest action.

(TO BE CONTINUED.)

For the Southern Farm and Home.

MANURE—NO. IV.

If manure can be profitably made by appropriating to it "odds and ends" of time, as has been suggested in the preceding articles, it certainly can be made to pay when pursued as a business. This article will be addressed to that class of farmers who employ six or more hands during the year and have stock of all sorts in the ratio of the hands employed.

The most intelligent and industrious one should be detailed for the special business of collecting, making and hauling out manure. The same arrangement for stable, cow house, hog, sheep and goat house, suggested in the second article, should be made; but of course on a much larger scale. It might be safer and more comfortable for the stock to have an open shelter covered with common boards running out from the back of these stables, cow houses, etc., (all of which should be on the same slope, side by side). The joists of this shelter should be nearly level with the floors of the stables or at least not more than two feet higher, so as to make it easy to pass over them by a foot way of plank or puncheons, when forming or watering the heaps below. These heaps should be made in the form of a frustum of a pyramid, say 10 feet square at bottom, and 6 feet square at top, and about 7 feet high. (Such a heap will contain about 500 bushels when loosened up). They will be formed of the manure collected under the stables, and every possible thing that will decompose or act the part of a good absorbent for retaining gases which might otherwise escape. All bones lying around the premises, as well as those which are daily accruing from the table, should be broken up as fine as possible, in the cheapest way, and scattered in that part of the heap which will most likely ferment. Care should be taken in forming these heaps to distribute the material in even layers and *pack them firmly*. The packing is one of the most important operations. Otherwise fermentation will proceed too rapidly and cause the heap to fire and lose its most fertilizing properties.

In addition to a shelter, there should be a cistern made water-tight and covered closely with a trap door fitting well. Into this cistern every nitrogenous substance, such as dead horses, cows, sheep, hogs, and offal of every kind, should be thrown and kept covered with water. Every morning a portion of this should be pumped out, mixed with the urine from all the houses on the premises and the wash and slop

water, and thrown over the tops of these heaps which should be left hollow so as to prevent the water from running down the sides. This water will gradually find its way to all parts of the heap if it has been well and regularly packed. Otherwise the liquid will run down the centre and never reach the outer portions.

In the course of two months after being regularly watered a heap may be profitably changed and repacked, throwing those parts to the centre which have occupied the outer parts before. The collecting material, piling, watering, hauling, etc., will keep one man actively engaged all the time throughout the entire year. The farmer who keeps a proper proportion of live stock on his farm will find the labor of one hand to pay better in this work than that of any other hand on the farm. He will not only save an immense amount of fertilizing matter which usually runs to waste on a farm, but will make that which he saves much richer and more active.

The point of greatest importance in manufacturing manure is to *concentrate* it, so that a much greater value may be carried out to the field at one load. If a man makes one load of manure as rich as two were before, he saves one half the expense of hauling and distributing. And if he makes one load 5 or 10 times as rich (which is practicable) he saves from four-fifths to nine-tenths of the expense attending hauling and distributing. Let any man make the calculation of the expense of hauling out 80 loads—the amount Mr. Bateman* did apply per acre—and compare it with the expense of applying five or six loads containing the same amount of fertility, and he will soon be convinced that the labor of the one man who is occupied in concentrating the manure is well spent, even if he saves no more by the operation.

Vats may be made on each side of the cistern into which the water from all surrounding roofs might be made to flow. These will furnish water for steeping what is thrown into the cistern by simply turning a cock and thus save great labor of hauling water for that purpose. In short all the available water about a place should be caught in cisterns, or iron bound hogsheds for use.

The writer has been led to make the preceding suggestions from having observed with great interest the successful manufacture of nitre by the Government at Augusta during the war. The plan proposed was substantially that practiced by the Nitre Bureau.

*See Mr. Bateman's letter in March No. of Southern Farm and Home.

After the war or surrender, the United States authorities sold the nitre beds in Charleston, and I understand they were sifted, sacked and sold by the *ton*, as other commercial fertilizers are.

Farmers are not sufficiently impressed with the truth that a division of labor is the most efficient cause of success in the best paying enterprises. The man who in any department of business devotes all his time and energy to one thing, generally succeeds in producing the best article in the shortest time. An intelligent laborer whose whole time is devoted to the manufacture of manure will acquire not only what political economists call "technical skill," but will learn a good deal of practical chemistry of immense value in all operations of the kind. There is no question but that the farmer, who has the means, will find that the labor of his best hand and mule, collecting and hauling manure, will pay a heavier per cent on the investment than that of any other hand and mule on his farm.

The collecting and manufacturing all the manure possible on a farm is not only a saving of money, which goes for its equivalent in guanos and superphosphates, but it is the only system of direct application of manures which promises permanent, as well as increasing, improvement of the soil. It has been often remarked that the lands of those men who have longest used commercial fertilizers, if not worse, are not perceptibly improved by their use. Some assert most positively that the land becomes sooner exhausted by them. The writer does not speak from personal experience or observation, but his experience and observation enable him most positively to assert that land manured liberally with good home-made manure, increases in value and will make many good crops even after manure has ceased to be applied. This system alone is not all that is required to make Georgia what she should be as an agricultural State. But an intelligent system of rotation combined with turning in green crops should proceed *pari passu* with the one discussed in this and previous articles. This will form the subject of the next article. R.

PRODUCTION AND CONSUMPTION OF COFFEE.—Brazil is the greatest producer of coffee, furnishing the article known in the market as the Rio coffee to the amount of 400,000,000 pounds yearly, or more than one-half of what coffee is supplied by the whole world, viz.: 718,000,000. Java gives 140,000,000, Ceylon 40,000,000, St. Domingo 40,000,000, Cuba and Porto Rico 25,000,000, Venezuela, commonly known as Carac-

cas coffee, 25,000,000, Sumatra 25,000,000; all others, including Mocha, 18,000,000. The people of the United States are the greatest consumers, to the extent of nearly one-third of the world's production, and nearly seven times as much as the inhabitants of Great Britain. The Germans come next as coffee drinkers.

The Folly of "All Cotton and no Corn."

If the minimum price of cotton were fixed at 25 cents per lb. in gold, and the maximum of wages and of current expenses was also fixed by Act of Congress at their present standard, so that the greater number of pounds of cotton we could raise the greater number of quarter dollars in specie we could put in our pockets, the present anxiety to raise a big crop of cotton, would be conceivable, at least it would be excusable, because in that case the calculation that one bale of cotton will pay for 100 bushels of corn or 600 lbs. of bacon, and that one acre of land in cotton will produce more than six acres in corn, would be partially true as a relative estimate of values. Even then to pursue such a course and raise nothing but cotton, would be bad farming, would result in the gradual exhaustion of the land, and a return to the old practice of clearing new ground when the old became worn out, and repeating the process until there was no longer any new ground to clear. And then suppose the corn crop of the West were to fail altogether from providential causes, and it should become impossible for us to obtain supplies from there because there would be none to obtain, even though Congress had fixed the price, and we had our money in our hands to pay that price, what could we do if there was no corn or bacon to be bought? Congress could not help us, for we do not believe that even Benjamin F. Butler pretends that that august body can control the seasons or compel the earth to yield her increase, although it may seat negroes in the Senate of the United States, open private letters, or tax the air we breathe. We should have our cotton and could sell it for 25 cents per lb. but we should have nothing to eat, and we seriously doubt whether the most enthusiastic advocate of "all cotton and no corn" would be willing to "accept the situation." He would wish that he had planted a few acres of his bottom land in corn where "the cotton did not open well before frost," that he had allowed Mr. W. H. Young or Colonel A. J. Lane to persuade him to plant a good oat patch, and would begin to realize the economical truth that no people who devote all their attention to one production, even though it be

geld, can ever be really prosperous; and that a diversified industry is essential to general welfare.

But if such could be our condition—if we could be reduced to such straits and compelled to make such admissions, under the protection of an Act of Congress, giving us at least 25 cents a pound for our cotton and enabling us to buy Western corn and meat at present prices—if even under such circumstances it would be manifestly unwise to raise nothing but cotton and depend entirely on other people for our provisions—what is the exact term which expresses the degree of folly of the “all cotton and no corn” men of to-day, who neglecting the lessons of experience, and the forcible admonition of the present price of cotton, still employ all their resources and concentrate all their energies in efforts to increase their cotton crop, relying on St. Louis for their corn and Cincinnati for their meat, with a full knowledge that the planter's income does not depend on the number of pounds of cotton raised, but on the price which he realizes, and that it is solely on account of the diminished production of cotton since the war (a little more than one third of the cotton crop of 1860) that one bale of cotton now brings twice the price that it brought prior to the revolution.

The thought may not be flattering to our pride and may be very inconsistent with our independence, but it is nevertheless true that prior to the war the cotton planters of the South were merely the overseers of the cotton manufacturers of Old and New England with a shifting salary dependent on the caprice of their employers. They exhausted their lands, deprived themselves of comforts, subjected themselves to continual anxiety and toil in an increasing effort to supply raw cotton at the lowest possible price to the cotton spinners of Massachusetts and of Lancashire, and the greater the measure of their success, the greater the number of pounds of cotton they furnished, the smaller the salary which they received from their taskmasters.

The results of the war deprived us of our slaves, reduced us to poverty, and compelled us to submit to political servitude, but they released us from our material dependence on the manufacturers. The positions were reversed. We became the masters who could dictate terms to our customers. We had the monopoly of the most necessary, non-edible, article in the world, and did we follow the plain dictates of prudence and foresight, we might by its means

achieve the highest measure of prosperity, complete financial independence, the possession of the greatest affluence and comfort, and in time, the position of political equality and independence which belongs to us of right.

It is as certain as that two and two make four that a crop of two millions of bales of cotton will realize to the producers as much cash as a crop of three millions of bales, besides saving one third of the expense of cultivation, and leaving available for food crops one third of the land. Every one will admit this, and nearly every one will remark on the folly of his neighbor “going in for all cotton,” making some plausible excuse for “going in” himself, or in the absence of any possible excuse pretending to pursue the opposite policy when in reality he has increased his cotton and diminished his corn planting. We all say without any positive knowledge on the subject, that India cannot raise cotton, that cotton in Egypt is a failure, and that the crop of Brazil “don't amount to a row of pins.” We say this and believe it because we love to think so. We hope it is so. But while it is true that India cannot raise as fine a staple as our cotton and that pound for pound ours will always command a higher price in the markets of the world, and while it is also true that the capacity of Egypt and Brazil to grow cotton is not, and is not likely to become equal to ours, it is equally true that they do raise cotton and to some extent compete with us, and that it is not by indefinitely increasing our production that we can drive them out of the market and secure an absolute monopoly which will be profitable to us.

If a fair account be taken of all the expenses of the present system of raising cotton, it will be found that they amount to between 15 and 18 cents per lb., and when the risks of bad seasons, caterpillars, worms, etc., to which the cotton planter is exposed, are taken into consideration it is not difficult to see that the present price of a cotton crop of two and three quarter millions of bales does not make cotton production a very lucrative business.

With a crop of about two millions of bales, we may count with reasonable certainty on 25 cents per lb. Every bale beyond that amount decreases the price. Therefore, even if we lay aside all considerations of a provident regard for the future, the improvement of our land, our material independence by raising what we consume, the increase of our comforts, the embellishment of our homes, the interests of those who come after us, and the means of reconquer-

ing our political liberties—as a mere money speculation, reduced to the naked question, “will it pay?”—“raising all cotton and no corn” is the extreme of folly.

It is demonstrated beyond the possibility of denial that we can grow corn in abundance to supply all our wants, that we can raise wheat, oats, rye, barley, peas, as successfully as any other section of the United States; that the old idea that clover and the grasses would not grow at the South is an exploded fallacy; that consequently we can raise our own stock and our own meat, and thus permanently improve our lands, and it is also proved that we can spin our own cotton and wool and make our own clothes.

To do this, however, we must resolve not to devote all our means and all our energies from January 1st, to December 31st, during the term of our natural lives to raise as much and as cheap cotton as possible to enrich our affectionate Christian friends at Lowell, and our hardly less sympathetic friends at Manchester.

They may have very strong claims upon us—though some of us think that whenever we asked them for bread they gave us something very like a stone—but charity begins at home, and they should not expect us to impoverish our lands, kill our calves to furnish them with cheap sweet-breads, ruin our posterity, deny ourselves the comforts and luxuries of life, depend on other people for our supplies, and devote ourselves indefinitely to an ill paid servitude, the wages of which diminish as our efforts increase.

From the Mobile Tribune.

Will Planters be Wiser?

What will the planters do this year? is the question we hear most frequently asked by persons taking an interest in the future condition of the South. That this the foundation class, on whose labors and success we are dependent for all genuine recuperation, of solid improvement, will continue energetic in their efforts to make available the productive resources of the Southern States, none are disposed to question. But with what judgment will their plans be adopted, their efforts directed? That is the question, and the question of no mean importance. We have failed to meet an intelligent planter who did not unhesitatingly express the conviction that the grain crop was of more unquestionable importance than was the cotton crop for insuring the pecuniary independence of this now impoverished land. There is, and can be, no difference of opinion among well informed sensible men on this subject; yet very many well-informed men continue year after year practically to contradict their expressed belief in this truth. They say, and we all concur with them in saying, that the cotton crop should be limited to, and solely constitute the surplus

production—the actual increase of wealth to the producers. If planters would strictly conform their practice to this approved policy they would insure to themselves more of home comforts, more independence, fewer anxieties, and more of assured annual increase of fortune. Cotton is not a necessary of life, not even an absolute necessity of commerce. Corn is an essential to life, and the planter who is without corn, but has cotton, must dispose of his cotton at any price he can get, in order to pay for the corn any price the holder may choose to ask for it. A man may live on with his back naked, but only for a limited period with his stomach empty. Corn, then, is a prime necessity—man's animal organization makes it so—it is the Almighty Maker's ordinance, and it cannot, without incurring penalties, be set aside and made to take the place of secondary importance.

This is another exemplification of the fact that to do right is always the only safe policy. The departures from this confessedly wisest practice by so many, if not by the great majority of our planters, can only be accounted for by referring it to that innate selfishness which is ever prompting man to make the public subservient to his individual interests. Each man hopes that his friends and neighbors and all other men will closely adhere to the rules of sound policy and so limit their cotton planting as to insure heavy crops of grain and of necessity a limited yield of cotton, while he alone will by his special sharpness in making the reverse rule his practice, have a large crop of cotton to dispose of at the enhanced prices, with the proceeds of which he can easily supply his corn wants and at nominal rates. Nor does his disappointment, year by year, dispel his vain delusion. He clings still to the hope that he will some lucky year prove to have been smarter than his fellows. Unfortunately for him, he belongs, has belonged, and we fear will continue to belong to the heavy majority side of our southern planters. Either this short-sighted selfishness, or a culpable ignorance of their true interests, or else a love of slavish dependence, has kept, and we greatly fear will continue to keep, our Southern planters in the position of bailiffs to rich and exacting northern and western proprietors. There is and there can be no independence for the South so long as we are dependent on other sections of country for the simple necessities of life. To no other one cause are we more indebted for the present state of humiliation and degradation than to our having pursued this same foolish and disgraceful policy before the war. We had not the means within ourselves of support during a protracted contest, and so not even the reckless expenditure of life could save us from being starved into submission. Are we demented, that we can be taught nothing by our calamitous reverses and scourgings? Must some fatality cause us eagerly to rush again into our old political party enthrallment, and to make haste to resume our old commercial dependence? Will nothing teach us common sense—the common sense of how best to live? We again repeat, that he is the best citizen who most judiciously controls his own household and most

successfully provides all the requisites for living independently of the world without. Substantial houses, secure enclosures, full crops of grain, strict attention to stocks of horses, hogs, and cattle, moderate crops of cotton, the wise application of surplus means to the development of the resources of the country—to the working of mines and building of manufactories, and roads, and foundries, and with still more strict attention to intellectual and moral culture, will most surely put us in the way of retrieving our lost fortunes and for making straight our badly warped reputation.

For the Southern Farm and Home.

A State Department of Agriculture.

It is passing strange that in a State like Georgia, so renowned for her great planters, so thoroughly identified both in character and reputation with the most advanced and progressive system of Agriculture, there should be no branch of the State Government devoted to this vast interest. The planters of Georgia have achieved much—the whole State resounds with their exploits, but in the government thereof, “their voices are not heard.” There is nothing connected with the machinery of government of Georgia which especially represents the agriculturist, or which has for its peculiar province the care of the interests of that branch of industry. It is probable that the census of the present year will show a total population in Georgia of twelve hundred thousand. Out of these, three fourths at least, are directly connected one way or another with the cultivation of the soil.

More than three fourths of all the taxes in this State are paid by the farming class. Nine tenths in value of the annual exports are their productions, and the greater part of the imports are paid for by them. With the exception of the cities and towns they own the entire State, and still they do not control it. In view of these facts it is not unreasonable that they should ask of the State Government the creation of a department specially devoted to the interests of Agriculture. It needs no army of officers and no great outlay of money to accomplish all that is needed. One additional office is all that need be created. The rest of the work can be done by adding to the labors of certain officers already in existence. With a Commissioner of Agriculture whose office shall be at the Capitol and who shall be the head of the new Department, and with the present county tax receivers and collectors, we have all the officers that are needed to put in full motion the entire machinery of an Agricultural bureau for the State. As a matter of course, we shall be met at the

threshold with the question, “what’s the necessity for all this?” This question we propose briefly now, in some sort, to reply to. It is just the question that should be asked and must be answered, and that in a satisfactory manner. If there should appear to be no necessity for such a department, if it should prove to be a mere fifth wheel, why then let us have none of it, and let us hear no more of it; but if it can be shown that it is a real want, and that we are an incomplete concern moving along in an uncertain sort of way without it, then let us establish it if we can.

First, then, let us glance at some of the difficulties which we now encounter, that would in a great measure be removed. The entire crop of 1869 has been made and gathered. Who among us can tell with any sort of business-like accuracy what that crop amounts to? We are pitching the crop of 1870 and about to plant it, and we do not now, and never will know what was made in 1869, nor any previous year. From what sources come the few scattering grains of information we do obtain, and to what extent are they reliable and accurate? They are two. The receipts of cotton at the ports pretend to give the crop of that staple. This is one. The other is the National Department of Agriculture at Washington. The latter, which is energetically and practically managed, furnishes a vast mass of statistics of which it may be said that when they are reliable they are too meagre to be worth any thing, and when they become voluminous they at the same time become inaccurate. This is attributable to the vastness of its field of labor and is unavoidable. Now about the cotton crop of Georgia and the receipts. It is impossible by this means to arrive at the amount raised in this State in any given year, for aside from the palpable difficulty of keeping out of the count cotton grown in other States and shipped from our ports, what sort of account can be given of the large amount annually consumed within her borders.

The truth is, it is all guess work at the very best, and strange to say the cotton planters of Georgia are to-day dependent for their information as to the aggregate amount of cotton they have raised, upon the calculations of the commission merchants of Liverpool and New York. They know how much cotton the planter has shipped and in their own good time they do not out to him such pieces of information through their “Commercial Circulars” as they think will be useful to them, not the planter. For this we do not blame them. They are wiser in the

generation than is the cotton planter in his. But this we do say, that it is a reproach to the Georgia cotton planters as a class, that they are thus dependent upon the merchants for facts which have proven to be since the late war of such vital importance to their business. *Timeo Danaos et dona ferentes*. It would not be so bad for the planter if he were only furnished with his information by a class whose interests were identical with his. That would merely amount to his having friends and allies smarter than he. What shall we say of him when it appears that it is a *quasi* antagonist upon whose arm he is leaning? We say then that no man knows how much cotton or corn or wheat or indeed of any crop Georgia annually grows, and we say further, that those who first discover what little is known belong to a class worthy in themselves, but to whom it is better for the planter to impart information than to receive it. Let us proceed then for a moment to consider in what manner the State Department of Agriculture would remedy these evils and accomplish the desired results. We will suppose that we have a chief located at the seat of government and that the tax collectors of each county have it enjoined upon them in addition to their present duties to collect semi-annually in April and December, (seed time and harvest,) from each individual as he takes his tax returns, a statement of the number of acres of cotton he planted and the number of bales he made, of the number of acres of corn and the number of bushels made, and so on through wheat, oats, rye, barley, potatoes, rice, tobacco, and other crops grown in the country. Let the number of acres planted be given in the spring and immediately forwarded to the head of the Department in Atlanta, to be consolidated by him. In December let the result be forwarded from each county to the same officer for consolidation. This would not add greatly to the labors of the tax collectors and receivers and it is perfectly certain that by this means each year by the time the corn and cotton crops were up or before, it would be known to a fraction how many acres of each were planted in Georgia. Of course it is intended that these returns should be given under oath like taxes and the collectors and receivers furnished with a separate set of books of blanks. Now to the objector who will say that it is not desirable to publish to the world every spring how much land we have put in corn or cotton or small grain, we will by way of answer, simply put this question—which is best, to have the truth told by the planter or to have exagger-

ated and manipulated statements published by those who, to say the least, have no interest in common with him, and who may have "axes to grind" very different from those used by him? As to whether it would be a desirable thing for the cotton planters of Georgia to know authoritatively and certainly on the first day of every New Year how much cotton and corn had been made the past year, we suppose there can be but one opinion. If they had known this every New Year since the war they would have been many million of dollars richer than they are. Yet it is easy to place exactly this information into the hands of every citizen of Georgia on the first day of every January. With the admirable system of railways and telegraphs which now intersect the State, it would be but the work of a few days to collect these statistics in all the counties, to forward to Atlanta and consolidate them, and then in a few hours the result can be made known to half the people of the State. The cotton planter in Decatur, the corn grower in Dade, or the Chatham rice planter, may each within a few hours after the business of the old year is ended, and before they enter upon the new, be accurately informed in bushels, pounds and bales, what has been made in Georgia. It is the firm belief of the writer whose pride it is to have been born a Georgian, that the grand sum total of all the productions of the good old State, year by year, would be found like BenAdhem's name in the roll of the good "leading all the rest." To establish this fact—to prove that unboastingly, silently, steadily, the Empire State of the South has moved up to the head of the list in the gross value of her agricultural products, is worth something in itself. It is not pretended that the outline of an Agricultural Department here given is at all perfect, nor do we suppose that the few statistics we have mentioned by any means embrace all within the proper limits of such an office. The census of domestic animals can be annually taken. The number raised and the number imported can be ascertained of mules, of hogs, or of any other live stock that had found its way into the hands of the final owner. Much more might be said in favor and it is possible that much more still may be said in opposition to this proposition, but those of us, if any, who live to see the Government of Georgia truly representative of her people, will behold as one of the most active, useful and least expensive of its departments, that whose duties shall lie in the direction we have feebly indicated in this article.

For the Southern Farm and Home.

The Labor System.

BY B. D. LUMSDEN.

It is a fact which cannot be denied that to make any kind of labor profitable we must have it under control. We must have it so we can direct it to secure the best advantage. Labor if not rightly controlled and directed will cease to be remunerative. In speaking of labor, we mean negro labor.

To the planter, the character of the negro is well known. Ignorant, childlike and superstitious, we must adopt some plan of controlling him in keeping with his character.

For the last four years almost every plan and system of hiring laborers has been adopted by the Southern planters, differing somewhat in detail. All the plans or systems may be reduced to two, viz: *The share of the crop system and money wages.*

The share system has been, and was, adopted from necessity. Many, in fact most, of our planters did not have money to pay for wages, and hence were reduced to the necessity of hiring for part of the crop. The share system is open to many objections. When hired for part of the crop the negroes think that they have nothing to do but to make and save the crop. Fences cannot be repaired. Ditches cannot be cleaned out. Lands cannot be cleared. Small grain or fall plowing cannot be done without extra expense. In fact no permanent improvement of the farm can be made. If you should contract for these things to be done, it is done so reluctantly and badly that the disappointment and fretting will hardly compensate for the work done. When working for part of the crop the negroes will always try and have some "say so" in the management of the crop. If you do not plant and cultivate according to their ideas, they become dissatisfied, and if they do not express their dissatisfaction openly to the proprietor or manager, they talk among themselves and create distrust in each other's minds, which often has a bad effect upon the order and thrift of the farm.

The most serious objection to the share system is in dividing the crop. It makes no difference how equitably or justly the division is made, if the hands do not get as much as they expect, they think you have cheated them and you cannot contract with them again for another year. In all countries where the share system once prevailed it has been abandoned because it did not prove profitable. In no business except planting is the share system pursued, and in no coun-

try except the South. No Railroad or Factory company or merchant shares with its employee, why should planters?

In the share system the laborer gets the advantage of the planter's skill to which he is not entitled, unless he pays for it. Mind must control matter, and mind ought to have the benefit arising from it.

From observation and experience, money wages, I am satisfied, is the best system to pursue. All business is carried on by money or its equivalent, and if experience has taught us that money is the best means of transacting business in other departments, why is it not best in planting?

Money wages are less complicated. They are therefore best suited to our laborers. As they are ignorant the simplest plan is the best. When you hire for wages the hand's time is all yours. Fences can be repaired, ditches dug and cleaned out, lands cleared, small grain sown, fall plowing done—in fact the laborers' time is all yours—whether at work in the field or elsewhere, you can plant plow or hoe, and manage as you wish, and they have no "say so" in the matter. At harvest time you have no division to make, therefore no dissatisfaction arising. After trying several plans of hiring and controlling the negroes, I have adopted this as the best. Hire for wages, so much per year, payable half each month, furnishing them rations, allow each family a garden and a small patch, and allow them to raise poultry.

Hire for the year, paying half each month. If you should pay them full wages every month, as they have no regard for contracts, as soon as your neighbor gets ready to chop cotton or some one in your neighborhood wishes hands and is offering a good price per day, they having been paid up will nine times out of ten leave. If you pay half each month, you have some check upon them. When day laborers are getting high wages they will not leave, because if they do, they forfeit the balance due them. Furnish them rations. If you contract with them for part of the crop you will have to advance their rations and when you settle with them at the end of the year, a great many will deny getting the amount of bacon charged to them. This will be avoided if you furnish them so much meal and meat each week. Allow each family a garden. The women do not contract, so let them have a garden—it will add both to their comfort and health. Allow each a small patch for potatoes, melons, etc. The rent of the land is a mere trifle, and the use of the stock in plow-

ing these patches, does not cost much. I would recommend this plan of keeping their time and accounts. Make a calculation what each hand is receiving per day and half day. Have tickets printed, or written, expressing the amount of each day or fraction of a day. At the end of each day or week, give to each hand as many tickets as he has performed days' work—for instance, if one has worked four and a half days, give him four and one half tickets. At the end of each month redeem one half of the tickets with money. If he has bought any thing from you let him pay you back in tickets to the amount of his account. I would not recommend keeping a store or making advances to the hands. Let them buy from other parties and pay out of the monthly half wages they receive. If this plan is pursued, which on account of its simplicity, is well suited to the negro, he can keep his own account. His want of tickets will show how many days he has lost, and how many days' rations he is due you, each one will always know how he stands, for his tickets and half tickets he can count as well as if they were dollars and half dollars.

By giving the tickets, the lazy and indolent ones will be induced to greater exertions, for they will naturally compare their tickets, and it will create emulation among them. Pursue this plan, deal fairly and honestly with the negro, and we can find no better laborer suited to our cotton fields.

It may be objected to this plan, that it is too tedious and laborious. We must remember that times are changed, and keep in mind the old maxim, "nothing is accomplished without great labor."

A NEW DISCOVERY IN CORN.—We find the following in the *St. Louis Journal of Agriculture*, credited to that very popular journal. The discovery may be productive of great practical good: "An intelligent and reliable neighbor of ours, who has for many years been making experiments with corn, has discovered an importance and value in replanted corn which is quite novel, and worthy of publication. We have always thought that replanted corn was of very little consequence, but this gentleman says, 'it is of so much consequence he replants whether it is needed or not—or rather, he plants two or three weeks after the crop is planted, a hill about every fifteenth row each way.' He says: 'If the weather becomes dry during the filling time, the silk and tassel both become dry and dead. In this condition, if it should become seasonable, the silk revives and renews its growth, but the tassel does not recover. Then, for want of pollen, the new silk is unable to fill the office for which it was designed. The pollen from the replanted corn is then ready to

supply the silk, and the filling is completed.' He says nearly all the abortive ears, so common in all corn crops, is caused by want of pollen, and that he has known ears to double their size in this second filling."

Hoe Your Own Row.

I think there are some maxims
Under the sun,
Sarcely worth preservation;
But here, boys, is one
So sound and so simple,
'Tis worth while to know;
And all in the single line,
Hoe your own row!

If you want to have riches,
And want to have friends,
Don't trample the means down,
And look for the ends;
But always remember,
Wherever you go,
The wisdom of practicing,
Hoe your own row!

Don't just sit and pray,
For increase of your store,
But work; who will help himself,
Heaven helps more.
The weeds, while you're sleeping
Will come up and grow,
But if you will have the
Full ear, you must hoe!

Nor will it do only
To hoe out the weeds,
You must make your ground mellow
And put in the seeds;
And when the young blade
Pushes through you must know
There is nothing that will strengthen
Its growth like the hoe!

There's no use of saying
What will be, will be;
Once try it, my lack-brain,
And see what you'll see!
Why, just small potatoes,
And few in a row;
You'd better take hold then,
And honestly hoe!

A good many workers
I've known in my time—
Some builders of houses,
Some builders of rhyme!
And they that were prospered,
Were prospered, I know,
By the intent and meaning of
Hoe your own row.

I've known, too, a good many
Idlers, who said,
I've right to my living,
The world owes me bread.
A right! lazy lubber;
A thousand times, NO;
'Tis his, and his only
Who hoes his own row.—*Alice Cary.*

WHATEVER you try to do in life, try with all your heart to do it well; whatever you devote yourself to, devote yourself to completely; in great aims and small, be thoroughly in earnest. Never believe it possible that any natural or improved ability can claim immunity from the companionship of the steady, plain, hard work-

ing qualities, and hope to gain in the end. There is no such thing as fulfillment on this earth. Some happy talent and some fortunate opportunity may form the two sides of the ladders on which some men mount, but the rounds of that ladder must be made of stuff to stand wear and tear; and there is no substitute for thorough going, ardent and sincere earnestness. Never put one hand to anything on which you cannot throw your whole self; never affect depreciation of your work whatever it is. These you will find to be golden rules.

The Value and Use of Agricultural Clubs, Books and Journals.

If the much, and we think most unjustly, abused State Agricultural Society has done no other good, it has certainly stimulated the formation of Farmers' Clubs and County Societies in various parts of the State, has resuscitated some that have long lain dormant, brought new associations into existence, and created generally a spirit of improvement, an emulation and a thirst for information, which did not exist heretofore. This is a great good, perhaps the greatest, most wide reaching, and most enduring, which it could have produced.

In every direction we hear of the formation of agricultural associations which meet regularly once a month or oftener, interchange opinions and views upon subjects of current interest, keep a regular and well digested record of their proceedings, and publish from time to time, such extracts from their record as are deemed of most interest to the farming public—such, for instance, as the article on sweet potatoes in our April number, from the transactions of the Maxey's Agricultural Club.

It is surprising the amount of solid good which this little club has done not only in its immediate vicinity, but in the entire county of Oglethorpe. Last year through its instrumentality an intelligent citizen of Maxeys, Mr. Samuel Bailey, succeeded in raising 52 bushels of wheat on an acre of land which before he commenced to cultivate it was as poor as can well be imagined, without being absolutely barren. This year experiments are being made with all the principal field crops. Tests of the value of the various fertilizers will be made, the various questions as to the best mode of cultivation, distance of rows and of plants in the row, quantity of seed to be sown per acre, etc., etc., will be discussed from actual observation and experiment, and the results made known for the benefit of all.

Clubs of this kind constitute a sort of Farmers' Exchange, where the men of experience

and intelligence who desire improvement, meet and interchange their views, where successes and failures are discussed and traced to their causes, and where all who desire knowledge can obtain it. All subjects in which the farmer and gardener are interested, are here considered and "talked over." It is not confined to cotton and corn, though of course, to both these important crops are frequent allusion made. One man, Mr. Bailey, for example, may be regarded as a good authority on wheat, another may be equally highly esteemed as an authority on cotton, a third may be very successful in raising hogs and all sorts of stock, a fourth may be a very skillful gardener, and a fifth may have achieved fame as a fruit grower. When these men meet they necessarily exchange ideas on the various subjects they understand best. Mr. Bailey has given his receipt for top dressing wheat in exchange for his neighbor's plan for raising "two heavy bags to the acre," the stock raiser has given an infallible recipe for hog cholera, hollow horn, or spavin, in return for which the horticulturist has given him valuable information about Irish potatoes and carrots, or the fruit grower has imparted useful knowledge as to the management of his newly planted orchard. Had they no club, and never met but occasionally at Mr. Fleming's store, when they went thither for a little "short sweetening" or some Rio for the old woman, or when they went "to town" during court week, nobody would ever know how Mr. Bailey top dressed the wheat which took the prize at the State Fair; the secret of how to raise "two heavy bags to the acre" would soon become a lost art, and the skill and experience of the stock raiser, the gardener and the fruit grower would be of no value to anybody but to themselves.

The meetings of these clubs do more than disseminate useful knowledge. They promote neighborly feeling, encourage social relations, remove prejudices, strengthen friendships, and cheer and amuse at the same time that they instruct.

They also make men think, and read and study. Instead of following the old way in everything and ridiculing improvement as "no account," they examine, reflect, and test practically, and frequently make most valuable discoveries. Then those who have been receiving information from the more skilled and experienced set to work to acquire information to impart in their turn. Their pride impels them to participate actively in the proceedings and contribute something to the common stock of knowledge.

However small may be the beginnings of these clubs, as they grow in interest and activity they increase in numbers, and as they become numerically stronger they extend the circle of their usefulness until the little village society of a few members, meeting in the back part of the store, becomes the Agricultural Society with its Fair grounds, buildings, race track, annual Fair with rich premium list, and printed volume of its "Transactions."

The weakness and dependence of the farming classes on this continent, as compared with the manufacturing and artisan classes, are distinctly traceable to the utter absence of all concert of action and combination among them. While they represent more wealth than all the manufacturers and mechanics combined, they have far less power than either. We have only to look to the present tariff to find the most convincing proof of what we assert. Each farmer acts for himself, relies upon himself, cares only for himself, lives for himself. The consequence is, that whenever the interests of farmers are assailed by the other classes, lacking the force which union gives to their enemies, they are scattered and divided and beaten in detail, whereas, did they act in concert with community of interest, and combination of strength, they must necessarily prove an irresistible power. Clubs will teach the alphabet of concert of action, and we have no doubt that the scholars will rapidly advance and acquire the lesson which the manufacturers of New England and the coal and iron monopolists of Pennsylvania are practiced with such profit to themselves and detriment to every one else.

Then again these clubs necessarily promote the reading and circulation of agricultural books and papers, wherein are contained in condensed form the experience and thoughts of those most fitted to teach, whose lives have been devoted to the study of the subjects which most interest the agriculturist, and who every few days give him the fruits of their years of laborious research, at a cost of less than what he pays for tobacco every month. These books and papers guide and instruct him in the pursuit and application of the knowledge acquired at the club. They are the treasury from which he silently draws his information.

It may seem that in dwelling upon the value of agricultural literature we are puffing our own wares, and acting like the carrier who said, "there is nothing like leather." We believe, however, that had we no connection with an agricultural paper our opinion would be the

same. It is not as an editor, but as a farmer we advise all our brother farmers to subscribe for and read the agricultural papers. We can honestly say that the poorest of all the agricultural publications we have ever read, has contained some article or paragraph conveying information which was worth to us far more than the whole year's subscription.

Lime and Salt.

"A Subscriber" asks the *Massachusetts Ploughman* if "lime, dry slacked, is a good fertilizer, mixed with plaster and ashes, or used by itself, for corn, potatoes and grass, or sandy loam soil?" He also asks if "Liverpool salt is of any value to sow on grass land, and how much to the acre?" To these queries the editor makes the following pertinent reply, which we commend to our readers:

"It may be set down as a well established fact that lime is a necessity in agriculture. If any soil is destitute of it, it must be supplied in some form or other. If it does not of itself give fertility, it aids in the decomposition of vegetable or organic matter in the soil, destroys acidity, pulverizes granitic soils, lightens stiff and heavy clays, and in other ways contributes to the productiveness of the farm.

"Generally speaking, the heavier the soil the larger supply of lime will it take, and if the soil is acid, peaty, it will require a liberal application, but on the kind of soil you mention, the application of ten or at most fifteen bushels per acre, once in three or five years, is as much as it would be judicious to give it. Such soils need large supplies of organic manures, and an alternate ploughing in the green crops will benefit them.

"Lime may be applied by itself or mixed with plaster and ashes as you indicate. Keep it near the surface. Lime should always be kept as near the surface as practicable, and not ploughed under. It will work down into the soil quite fast enough.

"Liverpool salt or any other salt is of considerable value as a top dressing on most grass land, but we should prefer to compost it before sowing with muck and lime, ashes, plaster or some other divisor. It is a very capital plan to dissolve the salt in water, making it as strong as possible, and then to slack the lime with this brine, and mix it in the compost while it is fresh. That is much better than to dry slack the lime when it becomes carbonated and slow in its action."

USE OF LIME IN AGRICULTURE.—The action of lime is two-fold: First, physical, and second chemical. As a mechanical agent it opens stiff clays, rendering them friable, mellow, and more easily worked; chemically, it acts upon the vegetable matter of the soil and sets free those stores of valuable substances which, without the action of this agent, must have remained inert and useless. It also enters directly into the composition of plants, and in many varieties forms a large proportion of the weight of their inorganic constituents. It neutralizes certain

acids which are often present in soils, rendering them useful to vegetation instead of being positively injurious, which they are in their original state. The existence of water in the soil, however, affects the action of lime very considerably. If the land is wet and undrained, lime will not exert the same influence which it would do in the case of thoroughly drained land. A greater quantity of lime is necessary to produce a given effect, and thus the neglect of thorough drainage entails a considerably greater expenditure in liming than would have been necessary, if the land was either naturally or artificially dry.—*Cameron's Chemistry of Agriculture.*

Millet.

TUSKALOOSA, ALA., March 7, 1889.

To the *Agricultural Editor of the Mobile Register*.—I see inquiries made in reference to "millet" as a hay-producing grass, and having had some experience with three varieties of it, furnish you my experience, if worth anything.

The botanical names of the kinds about which I shall write, I do not recollect, and have no books at hand to obtain them; shall therefore call them as usually known in the country. There is a large variety, with cylindrical, smooth head, leaves and stalks as large and coarse and much like the sorghum or Chinese sugar-cane, which does very well for cutting and using as a green food. This does not do well to cut and cure as hay.

The "Fox Tail" and "Hungarian Grass" are both fine varieties for hay, the "Fox Tail" being the coarser and stronger grower, yields the greatest quantity, but the "Hungarian Grass" is more delicate, and preferred by stock. On rich lands they will yield from two to four tons per acre, and may be planted any time up to the 1st of July.

I have sown them after taking off my wheat, but my usual plan has been to plant in basins in the plantation which are too wet in the early part of spring for corn. These basins dry out as soon as the weather becomes warm; they are then put in good tilth, rows laid off 10 or 12 inches apart, and the seed drilled thick and covered lightly with hand rake, or very light harrow. The plow and the hoe must be passed through the rows at least once, to give the millet the start of weeds, as it is a small and feeble plant when first up, but after that it grows rapidly, covers the ground, and takes care of itself. It may be cut repeatedly and used as a green food; but to make hay, it must be let alone until in proper stage for cutting—say when the seed are in the dough; after that it will not grow to do any good.

It may be cut with a reaper, mowing blade, or long knives, but not with a common cradle; cure as other hay, giving more time, as it is coarser and lies thicker on the ground than any crab grass hay that I have ever cut. It will not grow on lands too wet for corn or cotton. On very rich lands there should be from one peck to one half bushel seed sown, owing to the condition of the land. Unless there be a good stand the stalks will grow too coarse for good hay.

The Peanut as a Money Crop.

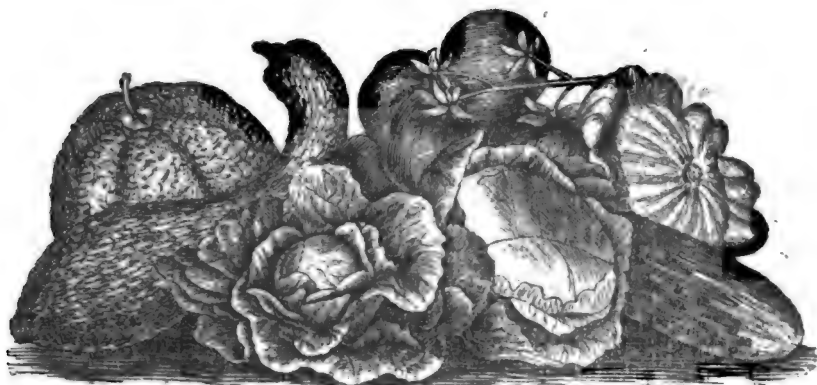
Dr. Philips of the *Southern Farmer*—excellent authority in all such matters—thinks there is money in the peanut. He says:

Land that will produce half a bale of cotton (value 25 cents per pound; say \$56.25 gross,) should produce fifty bushels of peanuts, at \$2.40 per bushel—\$125. The labor, if anything, is in favor of the peanut, though the gathering requires more haste and can't be postponed, as cotton picking. A friend writes us, offering us a half interest in a machine, *praised*, to gather with a man and horse, equal to five hands.

* The work is simple. Prepare land with one-horse plow; put land in flat ridges; select light land, which has been well cultivated in cotton the previous year; rows laid off three and a half feet apart; drill in about two inches deep, a week before planting—at time of cotton planting—about 150 pounds of superphosphate.—Procure sound seed—Carolina seed is best—weighing 28 lbs. to the bushel; hull carefully, not breaking the skin of the nut; drop two every eighteen or twenty inches, in a furrow made by a bull tongue, about two inches deep; cover with a board fastened to "chip" of shovel plow. When up, bar off and scrape, as is done for cotton. In a few days hill with shovel plow. Keep clean; stir the earth frequently; surface culture; do not displace the branches; don't cover any portion of the plant; keep earth in a slight ridge shape.

Better plant a few more seed than needed, so that a missing plant can be earlier filled by *transplanting* than replanting. Gather as early after the frost kills the vine as possible. Dry thoroughly, in house or on scaffolds protected easily from rain and dews. Keep the hull bright, as these sell better. More money in the peanut than in cotton!

COST OF LOAFERISM.—Does the young man who persists in being a loafer ever reflect how much less it would cost to be a decent, respectable man? Does he imagine that loafing is more economical than gentility? Anybody can be a gentleman, if he chooses to be, without much cost, but it is mighty expensive being a loafer. It costs time in the first place—days, weeks, months, of it—in fact about all the time he has, for no man can be a first-class loafer without devoting nearly his entire time to it. The occupation, well followed, hardly affords time for eating, sleeping, drinking—we had almost said drinking, but on reflection, we will except that. The loafer finds time to drink whenever invited. It costs friends. Once fully embarked on the sea of loafing, and you bid farewell to every friendly sail that floats under an honest and legitimate flag. Your consorts will only be the buccaneers of society. It costs money: for though the loafer may not earn a cent, or have one for months, the time lost might have produced him much money if devoted to industry instead of sloth. It costs health, vigor, comfort—all the true pleasure of living, honor, dignity, self-respect, and the respect of the world when living, and finally, all regret or consideration when dead. Be a gentleman, then, it is far cheaper.



Horticultural Department.

The Vegetable Garden.

By this time, we take it for granted that the main crops of vegetables have been planted, if not, the sooner the laggards "catch up" the better, for it not unfrequently happens that seeds sown this month fail to germinate, owing to the ground being parched, and then the poor seedman has naughty words applied to him, which he does not deserve. As in the farm, so in the garden, May is a month of constant work.

Eternal vigilance is the price of liberty, but, being relieved from much employment of it now in that direction, we may exhaust our stock in our gardens, for eternal vigilance against grass, weeds, and baked soil, is the price of good vegetables. Without it, the cut and green worm will eat our cabbages, the striped bug will destroy our cucumbers, and grass and weeds will choke our corn, beans, beets, carrots, parsneps, lettuce, radishes, etc.

The hoe, with a faithful gentleman from Africa at the end of it, should be kept going all the time.

Melons, Cucumbers and Squash should be thinned, leaving not more than two or three plants to a hill. When the vines are five or six inches long, pinch the ends and they will bear fruit sooner.

Sow Cabbage and Cauliflower and Beet seed for winter use.

Set out Cabbage, Tomato, Celery, Cauliflower, Lettuce and Egg plants, and shield them against the hot sun by shingles until they become rooted.

Plant out Sweet potato slips as fast as your land will supply them. You cannot have too many sweet potatoes.

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Keep the surface of the ground stirred lightly round growing vegetables.

Plant Butter and Lima beans, and corn for a succession.

If the weather be dry, use the watering pot freely, and give your vegetables the benefit of all the soap-suds from the laundry.

Sprinkle ashes or soot over the leaves of Beans early in the morning, while the dew is on them to protect them, against insects.

Mulch Tomato plants with pine straw *after* a rain. They will bear better and longer if this is done.

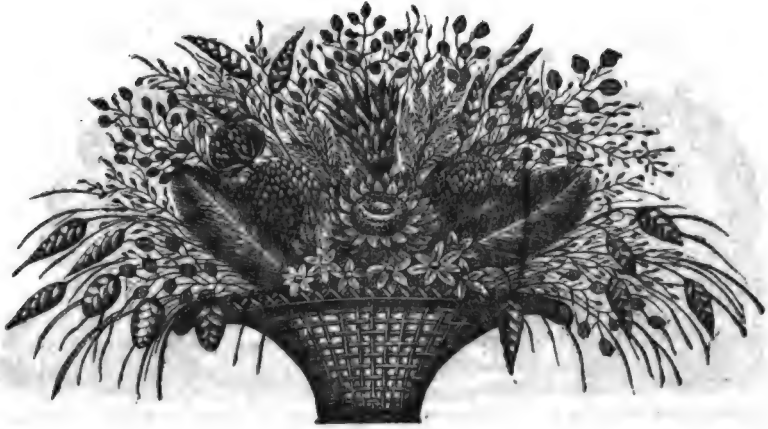
Remove the soil from the crown of the onion bulbs.

The Fruit Garden.

The cold snap or the succession of cold snaps in March has obviated the necessity of thinning the fruit of peach trees where too thick, which is a part of the work to be done this month. On other fruit trees it should be done now where found to be necessary. Remove all shoots of grape vines growing near the ground. Pinch off the ends of the shoots of fig trees to make the fruit larger. In dry weather, water strawberry beds abundantly at least twice a week. Three times would be better. Let this be done only in the evening. Cut the runners as fast as they appear. Look out for caterpillars, and all such *varmin*s, and when found *kuklux* them without mercy.

The farmer who obtains from the field not properly fertilized ten bushels of grain, when, by manuring, he might have obtained twenty, is selling his labor at half price.

The direction in which plants twine is not a direct result of the position of the sun in regard to them; the French bean turns from right to left; the hop from left to right, and the common bryony either way.



The Flower Garden.

The annuals are now commencing to bloom. If they are too thick thin so as to give them plenty of room. Water freely if the weather be dry. Liquid manure, if not too strong, and not allowed to touch the plant, will much promote its growth and vigor.

Keep all free growing Roses pruned in proper shape.

When the leaves decay take up Hyacinth, Tulip, and Crocus bulbs, and keep them in a dry place until planted out again in October.

Half-hardy annuals, biennials and perennials, may now be transplanted from the seed bed, the hot bed and from boxes. Cover from the hot sun with a shingle until established, and water freely.

Dahlias should now be staked, and tied with broad strips of matting. Remove all decayed blooms and seed vessels from roses. If seed vessels are allowed to mature they injure the flowering capacity of the plant. Cuttings can now be taken from Chrysanthemums.

Plants bitten by frost in March or April should be pruned below the part injured.

Remove all weeds and grass from the beds and walks, and let the grass borders and plat be mown every fortnight. A velvety lawn cannot be had unless the grass be kept regularly shorn.

When the early flowering shrubs have ceased to bloom, is the best time to prune them.

THE ROSE.—The world may be said to owe the rose, as it is, to the Empress Josephine—probably a greater debt than it will ever acknowledge to the man to whose grand purposes she was sacrificed. From 1805 to 1810, she collected at her favorite residence, Malmaison, the choicest varieties of the Rose that could be obtained, and thus gave an impulse to its cul-

ture. Of roses there were, in 1814, only 182 varieties and there are now more than 6,000, the poorest of which are much better than any which existed at that day. Dupont, the gardener of the Empress Josephine, was among the earliest cultivators of the roses from the seed.

For the Southern Farm and Home.

Landscape Gardening.

BY THE LATE WM. N. WHITE.

Two very different methods are employed in the formation of an agreeable landscape, the ancient or geometric, and the English or natural style. The geometric is suggested from the architectural lines of dwellings and fortifications. The fences, surface, roads and walks of this style are all made regular.

But as the arts advanced, mere regularity was not enough to satisfy an improving taste, and symmetry also became sought after as a still higher beauty, and one half of the elevation of the house and of the garden reflected the other. A straight avenue, bordered with trees formed the approach, and the arrangement of the ground and trees on one side were imitated on the other. In this style the lines and boundaries were either straight or curved, or some modification of straight or curved lines; but the characteristic in all these variations is the prevalence of regular figures, such as squares, circles, stars, etc., the employment of geometric lines as the boundaries of forms, and in regularity in the distance of objects such as trees, plants, etc., from each other.

In the finest examples, vases, statues, and fountains add an expression of dignity and elegance to the scene. It is properly employed in countries little cultivated and abounding in wide and irregular forms—the imitation by art being surpassed by nature herself, near at hand, would

yield no credit to the designer and give no variety to the landscape, while the employment in such localities of artificial forms, characterizes and distinguishes a place thus laid out from the adjacent scenery, giving the idea of wealth, skill and taste. To lay out a place in this style, needs only an eye for the perception of symmetry, and the beauty of mathematical forms.

The English or natural style is best employed when the scenery is not wild, but consists of fields highly cultivated and well enclosed. Here nature has been banished by extensive cultivation, and is to be imitated for the sake of contrast and variety, as well as innate beauty.

Its object is the artistic imitation of natural scenery in the production of a landscape about a country residence. It is not however merely an imitation of nature which it seeks, but an expressive, harmonious and refined imitation that is desired.

In this style, straight lines in the boundaries, regularity in the outline of forms, and placing objects at stated distances, are avoided. Avenues lined with trees at stated distances are not admitted. The trees are planted in irregular groups of three or more, and the object is so to plant them that the scene when they grow up would make a good picture. The designer becomes a landscape painter, works with trees and shrubs as the artist does with paints and brushes, by toning down what is glaring and obtrusive, and concealing what is unsightly, and arranging his materials so as to produce the best effect in the alternate play of shadow and sunlight.

A much higher degree of taste is required to lay out grounds in English than in the geometric style. In the natural style there are two modes of imitating nature, producing two varieties of beauty, adapted to different localities, viz: the gardenesque or graceful, and the picturesque. These should generally be combined in large places, but the one should predominate which is most consistent with the natural scenery.

The gardenesque style is shown in soft and easy undulations of ground—trees with smooth stems symmetric forms, and luxuriant branches, often drooping to the ground, and planted singly, or in open groups to allow each its full individual expression—in the easy curves of the roads, and walks; or, in water scenery, in the winding of the brook, or in the smooth lake with banks embellished by groups of trees, and flowering shrubs. The grounds must be kept with polished surfaces, the lawn mown frequently, and water-

ed when needful to preserve their soft, deep green, the walks well graveled dry, firm, and clean. Exotic trees, remarkable for form and foliage, are sought for, and grouped so as to harmonise with each other, and at such distance apart as will allow a full development of form. Rich groups of shrubs should be arranged near the house, which if not itself elegant from symmetry and architectural decoration, should, in order to harmonise it with the scene, be festooned with ivy and other climbing evergreens.

In picturesque planting, the outlines are more irregular, the surface more broken, and bold pines, cedars, and bushes are employed to give character to the scene. Thickets, glades and underwood are indispensable—the trees are grouped in every variety of form, and arranged more closely in the groups, much as they are found in natural scenery. This, however, does not forbid the introduction of foreign trees and plants, or the covering any deformity of the ground, or the laying out of walks; but in this style the walks are often angular in their turnings, their edges left indefinite and rough, graveled only near the dwelling or approach—the waters show bold shores, or are broken in wood fringed cascades. In this style masses of existing forest trees can be turned to advantage. Where the grounds are large and there is room for the full exercise of fancy, the edges of the trees should be broken by deep irregular recesses into dense shade—these bring forward the outer groups more prominently into the sunlight. The grounds need not be so nicely kept, the lawns are mown less frequently or depastured, the ornaments are of a rustic character, and the dwelling to correspond, should be in the Gothic, or old English style. In short, the picturesque style aims to produce that kind of scenery which by its strongly marked features, is peculiarly suitable for being represented by painting, while by the gardenesque style is to be understood the production in country seats of that kind of scenery, which is best calculated to display the individual beauty of plants, trees, and shrubs, in a state of culture, the smoothness and verdure of the lawns, and the dryness, smooth surface, and curved direction of gravel walks. The gardenesque is that style which is best adapted to display the art of the gardener, while the picturesque has constant reference to what would make a fine picture.

Josh Billings says: "Give the devil his dues, reads well enough in a proverb; but proceeds to inquire, very pertinently, 'what will become of you and me if this arrangement is carried out?'"



THE POULTRY YARD.

There is no stock about a farm which yields so large a profit for the feed they consume, and the care bestowed upon them as poultry, and yet very few consider them as of any value. But if none but the choicer breeds were used, if some attention were paid to their management, their roosting places, nests, food, water, etc., and particularly to their being kept clean, they could be made at once of considerable profit.

We saw it stated quite recently that a noted fowl raiser in New England, asserted that four or five acres of land devoted to the raising of the best kinds of poultry, produced him as large a revenue as a farm of 150 acres cultivated in the ordinary way.

Although none of us can expect to rival this New Englander, we can all improve on the present mode of managing our fowl yard. If we keep only a few, let us see that they are of the best and most approved varieties. The Dorking, Brahma Pootra, Poland, and Dominique, are, we believe, the best for laying and for the table, and of these we much prefer the white Dorkings, which are handsome to look at, are prolific and easily reared, and their flesh is as delicate as that of a partridge. All true Dorkings have smooth, short, white legs, a short neck and a long, plump body, and their great distinguishing mark is that they have five toes on each foot instead of four as all other fowl. The Brahmas are among the most esteemed varieties we have. They lay a great many eggs, and in winter when eggs are scarce they do not weary of well doing. They are early incubators, careful nurses of their chickens, domestic in their habits, and for the table are as good as the best.

The Poland or Polish fowl are distinguished from other breeds by their tufted crest hanging down over their beak and eyes. The thoroughbred Polands have blue legs, a black neck, body and tail black, and the butt of the wing of the

color of brass. They are noted above all other breeds for the great number of eggs they lay, and their little desire to set, whence they are often called by writers on poultry, "everlasting layers." They fatten easily, are esteemed quite equal to the Dorking and their skin and flesh are white. There are three varieties of Polish fowls, namely, the Golden-spangled, Silver-spangled and the Black. They are easily reared, but they do not grow as rapidly as other breeds.

The Dominique, or as the name is frequently pronounced, the *Domineckers*, are very hardy, lay abundantly, hatch well, are excellent nurses, and though they do not grow to a very large size, are very good for the table. Their peculiar plumage—speckled white and blue—giving them a greenish appearance, is the distinctive mark of the breed.

In the management of fowl, as to their roosting place, nests, etc., the great requisites are warmth, protection from damp and cleanliness. The fowl house should be swept every day and sprinkled with fresh sand, gravel or ashes and a little lime occasionally.

They should have plenty to eat. Allowing them to forage for themselves results in few eggs, fewer chickens and lean poultry for the table. All sorts of grain ground or cooked, boiled potatoes, refuse meat, lettuce, cabbage, most of the grasses, sorghum seed, sunflower seed, with a good supply of fresh water, constitute their food. Cooked food is much better than raw. It makes them lay more, fatten quicker, and consume less food. It is also good to give them a variety. The diseases of hens and chickens are few and easily treated. Indeed, by proper management they may be prevented.

Gapes, or as it is sometimes called *Pep*, is almost always attributable to dirty and unwholesome water. It can be cured if taken in time by removing the white blister on the end of the tongue and washing the part with vine-

gar. Forcing a feather down the throat of the patient "to remove the worm" is a kill or cure operation which more frequently does the former than the latter. A little spirit of turpentine occasionally mixed with the food is said to be a preventive, but clean whitewashed roosts and nests, wholesome food and clean water will be found to be better.

Roup, which manifests itself in swollen eyelids often terminating in blindness, difficulty in breathing and strangling, with an offensive discharge from the nostrils and mouth, is a contagious disease which if not treated promptly will carry off all the inmates of the fowl yard in a short time. The approved treatment is warmth, washing the head frequently in warm soap suds, mustard, pepper or ginger mixed with meal and forced down the throat of the sick fowl if it will not swallow it otherwise. Fowl attacked by roup should be immediately separated from the others as it is very contagious.

Vermin can be destroyed by giving fowl plenty of clean sand and ashes to roll in, with a little quicklime or sulphur mixed with the ashes.

The hard boiled yolk of an egg or boiled barley is an excellent remedy for flux.

But we repeat if the fowl have clean quarters, wholesome water, good food, and a dry range, the diseases to which they are liable will be generally avoided.

From the American Agriculturist.

Hints on Turkey Raising.

The southern part of New London county, Conn., is famous for its turkeys, and the manner of raising them is thus described by "A Native": "Ten or twelve hens with a gobbler is a good stock, and if there is a good range for them, this number may be kept with very little more trouble than a trio. Birds from 2 to 4 years old will bring much stronger chicks than yearlings, and give much better results. But if, from any cause, last year's hens are kept, let them be from the early broods. The late broods should all be sent to market. It is a great point to make the hens all lay near home, and for this purpose it will pay to yard them for a few days when they commence laying. They are thus much more easily protected from foxes, skunks and vermin, and are much more likely to keep together in one flock. When the young ones are large enough to go to the fields, make houses or shelters for them to lay in, and if possible, have them several rods apart, so that at hatching time the turkeys will not be able to hear the peeping of their neighbor's chicks. This will sometimes make a sitting turkey so uneasy that she will abandon her own eggs. If nests are made near one another the hens should be set at the same time, so as to come off together. This is also desirable in case of failure of a part

of the eggs to hatch. Two broods may be given to one mother to the number of 18 or 20 and the other hen will very soon begin to lay again. The eggs should be carried in at night, if frost is threatened, and be returned to the nest again in the morning. The heat that they receive from the birds while laying, and the turning that they get is said to have a favorable influence upon them and to make them hatch better. There is a difference of a day or two in the hatching of a fresh and an old egg, although they be of the same clutch. The old bird is inclined to accommodate her movements to the strongest of her family, and the weakest are frequently left behind and lost. When they come off, confine from one to three broods in a pen from 10 to 15 feet square, made by setting up wide boards edgewise so that the young ones cannot jump out. The old ones will not wander far from the pen, and in about a week the chicks will be able to clear the boards, when they may be safely left to go with the hens. In storms they should be sheltered. Give a little food at first. Indian meal is too fine, and frequently kills them. Get corn cracked at the mill on purpose, and increase its size as the chicks grow. Wheat, buckwheat and oats are good for them when a few weeks old. Feed, also, at first, with some kind of fresh animal food. Chopped liver and beef, boiled eggs and curdled milk are good. The success of the turkey crop depends mainly upon the first month. They should be brought home to the poultry yard every night. For the first three weeks a boy or girl should be employed to watch them, keep away hawks and other enemies, and see to the stragglers. Not a few chicks are lost in the grass and perish because they lose the sound of the mother's voice. One child can watch the broods of a dozen hens, and keep them in the same range—a great deal of trouble later in the season. For, if they begin to feed together they will naturally take the same course every morning, and all the turkeys will be found near together when they are sought at night, if they should fail to come of their own accord. If fed every night they will rarely fail to make their appearance when the cows come for milking. A pasture is the best range for them when they are young."

NOTES.—There are some things about turkey raising, which it is worth while for a novice to know, not told by our correspondent. Turkeys if well trained become very domestic, and may easily be made to lay, in good sized boxes placed in sheds or out-buildings, out of the reach of dogs and vermin. The eggs may be removed daily, and this is best if they are carefully handled, because a turkey is often half a day upon her nest long before she becomes broody. If early broods are desired, leave a nest full of eggs (wooden ones) and the hen will soon stop laying and sit. Very tame turkeys are often such persistent sitters that they must be taken off at least every alternate day to feed. Turkey hens are very careful mothers; they rarely or never tread upon a chick, and when the chicks are very young their extreme care is almost distressing. They may, therefore, be cooped; and this is best with all early broods, for otherwise the young suffer for lack of brood-

ing. When turkey hens are cooped with their broods the greatest care is necessary to prevent the coops becoming foul. It is well to shift them daily, or to use an abundance of *dry* earth scattered several times a day over the floor of the coop. We prefer to feed all young birds animal food; hard boiled egg with curds, mashed together and mingled with bread soaked in milk, is our favorite diet for young turkeys, and they thrive upon it. Cracked wheat and corn follow, and with other grains these soon become the staple food.

From the Farm Journal.

Guano.

Huano, in the language of Peru, signifies dung; the word is spelt by the Spaniards Guano. Although this great fertilizer is much sought after, and used by agriculturists, I apprehend its composition is not as well understood by them as it should be, nor indeed enough so, as to prevent being imposed upon in this great article of commerce.

I see a cargo of Guano advertised for sale and guaranteed to contain "75 per cent. of phosphate!" Phosphate of what? If the vendor means it contains 75 per cent. of the phosphate of lime, it is a spurious article. The best specimens of pure guano rarely contain more than 30 per cent. of the phosphate of lime. A selected specimen of guano, presented by Humboldt to Fourcroy and Vanquelin, two eminent chemists, and analyzed by them, was found to contain only 14 per cent. of the phosphate of lime, 6 per cent. of the phosphate of ammonia, and 2 per cent. of the phosphate of ammonia and magnesia. If a specimen of guano predominates in the phosphate of lime, it is, as Liebeg says, in a state of *cremation* and decay.

It is stated the Chinca and Bolivia Islands afford the best Peruvian guano, on account of the absence of rain in the latitude in which they lie, being 14—21, S. L.

As it has become fashionable as well as legal to have all fertilizers analyzed that are offered for sale, it may not be amiss to give the constituents of pure, and spurious guano as a sort of a guide to the unsuspecting farmer in making his purchases of this valuable agent, which I give as follows:

Pure Peruvian Guano, the per ct. given in round numbers:

1. Urate of Ammonia, 12 per ct.
2. Oxalate of Ammonia, 17.
3. Oxalate of Lime, 1.
4. Phosphate of Ammonia, 7.
5. Phosphate of Ammonia and Magnesia, 12.
6. Phosphate of Lime, 20.
7. Murate of Ammonia, 2.
8. Common Salt, a trace.
9. Carbonate of Ammonia, 1.
10. Carbonate of Lime, 2.
11. Sulphate of Potash, 4.
12. Sulphate of Soda, 5.
13. Sand, 2.
14. Water, 5.
15. Undefined Organic Matter, 8.

Spurious Guano, the per cent. given in round numbers:

1. Common Salt, 32.
2. Common Siliceous Sand, 28.
3. Copperas, 5.
4. Phosphate of Lime, 4.
5. Organic matter from bad guano, (to give it smell,) 23.
6. Moisture, 7.

Genuine Guano, says Dr. Ure, when burned upon a red hot shovel leaves a white ash of phosphate of lime and magnesia; whereas a factitious substance, as above, left a black fused mass of sea salt, copperas and sand.

It has been suggested by a chemist, when guano is purchased, it would be well to bottle up a specimen and if the crop to which it is properly applied does not yield correspondingly, to have it tested and see if it was what it was bought for.

The farmer will do well to look into this subject.
CERES.

STABLE ECONOMY.

HOUSTON Co., GA., April, 1870.

Dear General:—I send you one or two very valuable receipts for the efficacy of which I can vouch.

FOR FOUNDER IN HORSES.—One tablespoonful (heaping) of powdered alum. Pull the horse's tongue out and put the alum on it, as far up as possible. A certain remedy.

FOR COLIC.—Pour cold water on the back, from withers to loins, for 15 or 20 minutes. The water runs over the sides and flanks of the animal and relaxes the system. I never saw this remedy fail.

FOR STAGGERS.—Keep hot, *wet cloths*, on horse's back and top of the head till relieved—administer an active purgative at same time of aloes, or anything else.

Respectfully,

BIG CREEK.

CHARCOAL FOR HORSES' WIND.—Many years ago, I remember a horse being brought into the yard of Joseph Bignal, a celebrated man for keeping hunters, at Croydon. The horse was very much affected in the wind, and could hardly move from distress. In a very few days this animal did its regular work as a hunter, with perfect ease and comfort to itself. Tar water was the cure. Tar is carbon, and charcoal is also carbon; charcoal in powder is more easily given than tar water. I have tried it with most beneficial effect, and I think it stands to reason that the removal of noxious gasses and flatulence from the stomach of the horse must improve his wind and condition. Tar is frequently given with benefit in cases of chronic disease of the respiratory organs; but its effects are totally different from those produced by charcoal (carbon).—*London Field.*

Plaster of paris, mixed with resin soap forms a good cement for fastening kerosene lamp burners.

Household Department.

Domestic Receipts.

BY MRS. WM. N. WHITE.

CALVES FEET JELLY.—To four calves feet, or one set, well cleaned, put five quarts water, boil slowly until the water is reduced one half; strain the liquor, and set by till the next day. When perfectly cold and stiff, clear from the top every particle of grease, turn it out and cut from the bottom every particle of sediment. The jelly must be perfectly clear. Add to it a wineglass of brandy, also one of wine, with half pound of white sugar, the thin rind of one lemon, juice of six, the whites of six eggs well beaten, and the shells bruised; stir all together gently till the sugar and jelly are melted; boil ten minutes; dip your jelly bag into hot water, and wring dry; place an eggshell in the point, and pour in the jelly; if not clear, continue to pass it through till it is, then pour into jelly moulds.

PIE PLANT PIE.—Take the freshly gathered stalks, wash them and cut them into small bits; stew in a very little water; as soon as they begin to cook they are all juice; then take one cup of the stewed plant, one cup of sugar, one egg, one tablespoonful of flour, the juice of one lemon; flavor with nutmeg or orange peel. This will make one pie. Bake between two crusts. Gooseberry pies are made in the same way.

ANOTHER.—Take the freshly gathered stalks, wash, and cut into small bits; line your pie plate with nice puff paste—to one cup of the plant, put one cup of white sugar, a small bit of butter, and one tablespoonful of flour; flavor with nutmeg or orange. Place over it a nice crust, and bake as an apple pie.

CORN STARCH BLANC MANGE.—One quart boiling milk, three spoonfuls corn starch mixed with a little cold milk, sweeten, and flavor with lemon, if preferred; pour it into boiling milk, stir well for two or three minutes; pour into moulds. When cool, turn out, and surround with large ripe strawberries, to be eaten with cream and sugar. This is a beautiful dish, and as agreeable to the taste as it is attractive in appearance.

FROSTED FRUIT.—Beat the whites of eggs, and dip the fruit in them; then lay it in finely powdered sugar, or sprinkle the sugar over them; lay them on tins with white paper under them, and set them in an oven to dry; when the icing is firm, pile them in a dish and keep in a cool place. A very pretty dish for evening parties.

PIE PLANT PUDDING.—One cup of sour milk, one teaspoonful of soda; make a batter as for a flour pudding, rather stiff; add some chopped stalks of pie plant. Boil an hour, serve with cream and sugar.

STRAWBERRY DUMPLINGS.—Make a light crust, roll half an inch thick, put a gill of berries for each dumpling. Boil, or steam an hour; eat with butter and sugar sauce.

ASPARAGUS.—Select the large green stalks, wash them carefully, cut off from the white end, making all of one length, tie in bundles of twenty, put them in a pot of boiling water with a tablespoonful of salt; let them boil slowly twenty minutes, take them up with a skimmer and lay them on slices of toasted bread well buttered; if the toast is not sufficiently moistened pour over some of the water in which it was boiled, adding a little pepper; lay two bunches upon one dish with thin points together, take off the tapes and serve. Another way of cooking asparagus is to cut it into bits half an inch long, and boil the white ends ten minutes before the points are put in, then put in the points with a cup of new milk, and salt and pepper; let them boil ten minutes, and pour all, over buttered toast, and serve. Green Peas may be cooked in the same way.

PRESERVING BUTTERMILK.—Take a vessel that will contain nearly twice as much as you wish to save. While milk is plenty, fill it two-thirds full of buttermilk, and then fill up with water. Drain off the water, and refill with fresh twice a week, stirring it well each time after filling, and you have a good article always ready.

BAKED EGGS.—Put half an ounce of butter into a small tin pan; break four eggs into it keeping the yolks whole; throw a little pepper, and salt, and bits of butter over; put it into the oven till set, and serve. If the oven is hot, they will cook in about six minutes.

BREAD OMELET.—Put into a teaspoon of bread crumbs, a teaspoon of sweet cream, a spoonful of butter, with salt and pepper to the taste. When the bread has softened, and absorbed the cream, break in four eggs; beat them a little with the mixture, and fry like plain omelet.

PRESERVING HAMS.—Cure and smoke in the usual way, take them down while the weather is still cool, have ready some tight sacks larger than the hams, place the hams in them, and fill in all around the ham with good sweet hay; tie securely, and hang in a cool dry room. The hay absorbs the moisture that collects on meat in wet weather, preventing mould, and also imparts to the meat a pleasant flavor.

From *Tinsley's (London) Magazine*.

FALCONEST.

We were all rather surprised at Linda's sudden marriage; and yet she could scarcely have hoped to do so well as the world counts doing well. A penniless German girl, without a status here or at home in her own country, it was surely a piece of supreme good luck that such a man as Lewis Falconer should take a fancy to her and make her his wife, before she had fully realized the desolateness of her own position. Certainly, Lewis Falconer was no favorite with us at Stretton, though we could not have said why; for he was rich, handsome and well bred; and yet what was it that made us all dislike him so intensely; and that made us school girls at Mrs. Warring's more than dislike, even fear him? There was nothing in his appearance to warrant this dread of ours, and yet I verily believe not one of us would have stayed with him alone for five minutes.

I hated him as much as any one did, and I was as much afraid of him as any one was, but I could not explain it to myself. He was the very reverse of a typical ruffian, being a slightly-built, rather undersized, fair haired man, with singularly small white hands, of which he was very proud, and a perpetual smile on his loose and over-red lips. Perhaps it was because his lips were so over-red—I remember Hetty Lane always said they reminded her of a vampire's—or because his smile was so perpetual and yet so cold, showing those two long white teeth of his, shaped just like a rat's teeth; perhaps it was because his eyes were of such a light-green hazel color, set so deeply under his brows, and never looking straight into yours. I do not know; it might have been because of one, or all, or none of these things; for school girls are strange creatures, with quite irrational instincts and antipathies; I only know the fact that we all hated him, and were all in deadly fear of him if ever by chance we had to speak to him. And yet he was handsome; indeed, some people called him one of the handsomest young men in the country. The brow was broad, if low; the nose fine and high—he used to call it the 'true falcon beak,' and so it was; the fair hair fell picturesquely about the sleek and pallid face; but, there it was; the expression was cruel, the well-bred manner masked one unending sneer, and his very admiration for us girls—and he professed a great admiration for us all—was more an expression of superiority than of affection. He treated us all—save his cousin, Eva Fairlie—as mere pretty playthings, utterly inferior to himself, and as if we ought to be grateful for his condescension when he noticed us. And this was just the kind of thing to annoy a set of school girls whose heads were full of Mario, and the lovers one meets with in novels, and to whom the barber's block kind of man is the ideal to be longed for.

Still papa, though he confessed that he "did not quite like him somehow," always said that he was a first rate match for Linda, and mamma declared he "was very nice and gentlemanlike, and that she was sure Linda would never have such another offer, and that it would save her

a great deal of knocking about and humiliation if she got settled now at once, and so she had better take the goods the gods had provided her, and become Mrs. Falconer without delay." I was always against the match, but I had no reason to give; and Linda, in her quiet, indifferent way, said, "Very well; perhaps to be mistress of Falconest was better than being governess at the Grange, under the eye of that dreadful Mrs. Tidey, who asked her to go there at twenty pounds a year, and six children to look after." So Linda and Lewis Falconer were engaged and going to be married, all in a minute as it seemed to us; and heartily sorry I was at the idea of losing the quiet, placid girl, who, though she was perhaps a little heavy and German, was as good as gold and as true as steel. And when a girl marries a man one does not like, one does lose her; even if as intimate as I was with Linda. We were almost like sisters together; we were exactly of the same age, and had been class-mates and school-mates at school for the last four years, and so had got to be very near and dear to each other. Besides, we, what papa called, supplemented and corrected each other. Linda's placidity checked my more impatient temper, and perhaps my rhapsodicness—papa's word—roused Linda out of something that might have sunk into apathy if she had been quite left to herself. At all events, we got on together most beautifully; and I can safely say, in all our lives had never had one single word of quarrel or misunderstanding.

We were sitting together in her room at Falconest, the night before her marriage, brushing our hair by the fire. Linda was proud of her hair, and she had reason to be so. It was the German hair, *blonde cendree*, with no red in it, but just a shimmer of gold to lift up the ashen hue, and take it out of insipidity; and it was long, thick and silky. There was not the faintest ripple in it, but it fell in a heavy kind of cascade when she let it down, that in itself was a beauty. As she sat now, negligently drawing her comb through her long masses flowing over her shoulders, she made a pretty picture, with the fire-light gleaming on her, and touching her white face with a ruddier tint, as it flickered and fell. I could not help thinking what a contrast there was between us: I, with my short, boy-cut, curly black hair, my turn-up nose, and dark-brown eyes as big as saucers; and Linda with her bleached face and mild gray eyes, her indolence of attitude, and the patient kind of melancholy that was in every line and turn of her face and figure. I was sitting on a low stool, resting my clasped hands on the arm of her chair, and trying to read her thoughts in her face as she leaned dreamily back, drawing out those thick skeins of yellow silk of hers as if she did not know what she was doing. After a long spell of silence she said, answering my looks: "I think I shall be happy, Christy. I do not see why not."

I did not know much about such things, but thought if I had been going to be married, should have liked to have been able to say something more decided than this, and in a different tone, too.

"I hope you will, Linda," I answered; "

don't suppose you would marry Mr. Falconer if all if you did not think he loved you, and could do all he could to make you happy."

"Well, you know, Chrissy, we Germans do not look for so much devotion as you English women do; and if Mr. Falconer will be satisfied with me, that is all I shall ask."

"This is being very humble and self-denying, Linda," I said hurriedly; the humility of her words and manner pained me more than I could express. "I don't think I should ever consider myself so much my husband's inferior, so entirely his property as to be thankful if only he was such a lenient master as to be satisfied with me."

She smiled. How well I remember that smile! It was one of those sudden, transient revelations of a deeper nature which leave their mark for life upon one's memory.

"Ah, but remember, Chrissy," she said, very slowly, and she looked down while she spoke, "I am nobody. Even a wife can feel that she is a pauper and living on her husband's charity; and what am I but a pauper to Mr. Falconer?"

"Don't say such things, Linda," I cried; "you ought to have more self-respect than to even think such dreadful things. Pauper, indeed! With all his money, and his fine house, you are not too good for Lewis Falconer, and that is the simple truth."

"Dear Chrissy," Linda answered, stooping down her head and kissing me; and I remember this hour the feeling of her soft, scented hair as it fell over my face and on to my neck; "it is not my fault if I have so little self-respect, as you call it—pride, as I should call it. When I have nothing to boast of in one's circumstances, it is hard to put much value on one's person. Do you know, Chrissy," she went on to me, "I have never been able to understand why Mr. Falconer wanted to marry me at all?" and she lowered her voice and looked anxiously into my face. "Don't you remember, only two months ago, how much in love we all thought I was with his cousin Eva Fairlie, and how surprised we were when she went away so suddenly, and he told us, when your father asked her for her, that he supposed the next thing we should hear of her would be that she had married an Italian count? And then all at once he turned to me, and has made me marry him in such a hurry—me, of all people in the world!—there were never two girls more utterly unequal than Eva and I. And you remember, didn't you, how she used to hate me? I sometimes think—isn't it wicked of me, Chrissy?—that if I were to come back, Mr. Falconer might regret having married me, and fall in love with her again; and when I think that, I feel that it would be better for me to say no 'No' at once—'No,' the last moment, in the very church itself, and to slip the ring on my finger."

She shuddered as she spoke as if she was cold; and I too, suddenly felt a strange wind sweep over us. I do not know where it came from. No window was open; the fire was burning brightly in the wide hearth; and yet an icy stream of air seemed to flow all about us, and chilled me to the very bone.

"What a cold night!" I said, shivering.

Just then the wind rose into a wild howl, and shook the branches of the yews and cedars outside as if a living thing had got hold of them. It made the old tapestry on the walls of the room where we were wave and flutter till the huge pale figures looked alive; it was a blast so wild and sudden it seemed to shake the whole house from roof to flooring, and the moan of it was like something in great pain.

"O, Linda, what a horrid place this Falconest is!" I said again, I am afraid a little petulantly, as I stirred away at the wood fire curiously, and sent a crowd of sparks up into the blackness.

What fantastic shadows and flame—light make together. There, as I sat looking at Linda, I distinctly saw the dusky outline of a long and slender hand steal round her throat; and I supposed it was from a sudden vivid flame, all her long fair hair was dyed a deep blood red.

"Linda, what is that?" I cried.

"What?" she said startled.

"There! that red stain! Linda, what is it? there, on your hair?"

"On my hair? red stain? Nothing Chrissy," she answered, taking up the heavy mass in her hand. And at that moment the flame went out; and only the diffused light of the embers fell on the blonde head, and the fair face and throat were again undarkened by shadow and unstained by blood.

It was a horrible fantasy for the moment, and I felt almost sick with nameless terror. Linda, too, looked scared, and once or twice glanced round the large dark chamber, putting her hand to her throat and chest, as if in pain.

"We have sat up till we are both nervous," I said, trying to speak lightly; but somehow my voice would only come hoarse and rough. "The best thing we can do now is to go to bed. Hush! what is that? Linda, who is it?"

"God protect me!" cried Linda, clinging to me in terror; "that is Mr. Falconer's step. He is coming for me!"

And as I live we both heard a man's footfall through the room—a low, heavy step, that seemed to walk as if under a weight, from the fireplace where we sat to the door; and as it passed, a shuddering, moaning kind of sigh went with it, and the drip, drip, of something falling on the black oak floor.

"O Linda, do not marry Mr. Falconer!" I said excitedly; "come back with us to-morrow, and break off this horrible marriage. Do not live at Falconest; it is a God-forgotten place, Linda; it is full of crime and suffering!"

"I must marry him," sobbed poor Linda wildly; "and he terrifies me so much, Chrissy, I cannot tell you what he makes me feel. I don't want to marry him, I never have wanted; but he makes me."

"Then, you shall not, Linda," I said, "you shall come back with us to Stretton to-morrow, and you shall live with us, and not go out as a governess at all. Linda, dear, you shall not be sacrificed to this man!"

As I said this a little, light, mocking laugh sounded just at my side. It was Lewis Falconer's laugh, but he himself was nowhere to be seen. The sound seemed to recall Linda to her

self. Pushing back her chair, she suddenly composed herself—I never saw anything so sudden—and looked at me with an anxious expression in her face.

"I have been talking nonsense, Chrissy dear," she said slowly. "We have both frightened ourselves to death in this dreary, rat-haunted old place. You know what odd noises the wind and the rats make in an old house; but when the place has been thoroughly aired and brushed up, we shall have no more ghosts to frighten us. Come, let us go to bed before we get quite foolish. This is the last time we shall see each other, Chrissy, for perhaps a long while."

She kissed me as she spoke; but though she tried to seem so calm, I felt her poor heart beat violently against mine, and I brushed off some tears with my lips when I kissed her cold face. As for me, I was sobbing passionately, and it was long before I fell asleep; but at last I did, and did not awake until Mary the housemaid called us in the morning, smirking as she brought Linda a lovely bridal bouquet which her husband-elect had sent her.

It may seem strange that we were in Mr. Falconer's house before the wedding, but that was his wish. Papa and mamma had wanted to give Linda away from Stretton, our own house, but Mr. Falconer would not hear of it. He had a fancy, he said, that the marriage should take place at Falconest, in the private chapel belonging to the house, and that the world should see his bride as she was—his without the intervention of friends, or the advantage of dower of her trousseau, and nothing would dissuade him. It was his liking, he said, with that florid smile of his on his red mouth; and as it was a liking that cost no one but himself anything, he thought he might be allowed to indulge it. He would not allow Linda to possess a gown or a bonnet that he had not paid for; and he insisted that, on the morning of her marriage, everything hitherto belonging to her should be given away or burnt. He endowed her very well, that I must confess, but I think I would have sooner died than have submitted to this kind of insolent generosity. I would rather have begged my bread than have been taken as Linda was—more as a slave girl who had been bought for so much than as a free Christian maiden who honored the man to whom she gave herself. But for all that I would not let her call herself a pauper. My father and mother were dreadfully annoyed at the whole thing; but what could mere friends, as we were, to do against the determined will of such a man as Lewis Falconer, helped as it was by that kind of passive obedience, that yielding indifference which belonged to Linda's character? She was nobody's care; she was her own mistress entirely; and if she chose to obey Lewis Falconer, and to do as he desired, no one on earth could prevent her.

So this was how it had come about that we had been sitting by the fire in a room at Falconest on the eve of the marriage, frightening ourselves to death with what Linda called rats.

The morning broke gray and cloudy, and presently large flakes of snow began to fall. But that was not of much consequence; the chapel was within the walls of the old house, and there

was to be no bridal tour for the young people. After breakfast we, the only guests and friends invited—that is, I and my father and mother—would drive home; and we were people who did not care for weather, and never made a fuss about trifles.

Linda looked very lovely at the wedding—little too pale, perhaps; but then brides ought to look pale, I believe. She was beautifully dressed, for Mr. Falconer had exquisite taste, and her face, flowers, ornaments, and whole attire were just perfect. The opals round her throat were really something to see; but how red the color of them! They showed no other color as the light struck through them, but fiercer red. But they were magnificent stones, and must have been worth a fortune in themselves. And yet, poor Linda! I could not help pitying her in my heart, though it seemed so stupid to pity a girl for being married to a smiling, rich, and handsome man. How wished he would not smile so much! That cruel mouth of his; those dreadful long white rat-teeth; and yet he was so handsome, and bore his part with such wonderful grace and ease. How I wished I could have liked him better.

Suddenly, just as the ring had been placed on her finger, the oaths taken, and the clergyman had pronounced the irrevocable words which bound them until death should part them, the chapel door creaked noisily on its hinges, and a tall girl dressed in deep mourning stood within the opening. It was Eva Fairlie, Lewis Falconer's cousin.

(TO BE CONTINUED.)

A LAUNDRESS gives the following recipe for doing up shirt bosoms: Take two ounces of fine white gum arabic powder, put it into a pitcher, and pour on a pint or more of water, and then having covered it, let it stand all night. In the morning pour it carefully from the dregs into a clean bottle, cork it and keep it for use. A tablespoonful of gum water stirred into a pint of starch made in the usual manner, will give the lawns either white or printed, a look of newness when nothing else can restore them, after they have been washed.

REMEDY FOR IN-GROWING TOE NAILS.—The best remedy for in-growing toe nails is to cut a notch about the shape of a V in the end of the nail, about one-quarter the width of the nail, distant from the in-growing side. Cut down as nearly to the quick as possible, and one third the length of the nail. The pressure of the boot or shoe will tend to close the opening you have made in the nail, and thus soon afford relief. Allow the in-growing portion of the nail to grow without cutting it until it gets beyond the flesh.

May is considered an unlucky marrying month by some people. A young girl was asked, not long since, to unite herself to a lover who had named May in his proposal. The lady hinted that May was unlucky. "Well, make it June then," replied the swain. Casting down his eyes with a blush, she rejoined, "Would not April do as well?"

PREMIUMS.

The Publishers of the *FARM AND HOME* will give a premium of Fifty Dollars in money or books, selected from their catalogue, to the writer of the best Tale of Agricultural and Rural Life, and a similar premium of Fifty Dollars in money or books to the writer of the best poem, on the same subject.

The articles will be judged by a committee of three disinterested and competent persons in Macon, on the 15th June, 1870, who will award the prizes. All the compositions which are intended to compete for the premiums must be sent in sealed envelopes, together with the names of the authors, to the Editor of the *FARM AND HOME*, on or before the 31st of May, 1870.

All contributions so sent will be regarded as the property of the publishers.

Books, Pictures and Organs. Given Away.

As a reward to those who take the trouble to get up clubs of subscribers to the *FARM AND HOME* in their neighborhoods, and as an encouragement to others to engage in the enterprise, the Publishers have agreed to offer the following liberal premiums:

OUR PREMIUM LIST.

To any person sending us Three Subscribers and Six Dollars, we will send any one of Bulwer's and Scott's or Dickens' Novels, or any other book in our Catalogue, worth \$1 50.

To any person sending Eight Subscribers and Sixteen Dollars, a highly finished Picture, (Chromo) worth \$7 00, or books to that amount selected from our Catalogue.

To any person sending Fifteen Subscribers and Thirty Dollars, one or more Chromos, worth \$15 00, or books to that amount.

To any person sending Thirty Subscribers and Sixty Dollars, Books of the value of \$85 00.

To any person sending Seventy-five Subscribers and One Hundred and Fifty Dollars, a Parlor Organ, or a Sewing Machine, worth \$60.

To any person sending One Hundred and Fifty Subscribers and Three Hundred Dollars, an Organ worth \$180, or a Library, selected from our Catalogue, worth \$150.

Our Catalogue includes all the best Standard Books, Agricultural, Historical, Miscellaneous and Juvenile, Bibles, Hymn and Prayer Books, in all styles of binding, Photograph Albums, etc., etc. This Catalogue will be sent, postage free, on application to the Publishers.

TO CORRESPONDENTS.—All communications and articles intended for publication in the *FARM AND HOME*, as well as all inquiries to be answered in these columns, should be addressed to **WILLIAM M. BROWNE**, Editor *FARM AND HOME*, Macon, Ga., so as to reach him as nearly as possible on the first of every month.

Letters enclosing money for subscriptions and advertisements or relating to business matters, should be addressed to **J. W. BURKE & Co.**, Publishers, Macon, Ga.

CLUB ARRANGEMENTS.—By arrangement with the under mentioned journals, we are enabled to offer the following inducements to subscribers:

THE SOUTHERN FARM AND HOME and BURKE'S WEEKLY, one year.....\$ 3 00

THE SOUTHERN FARM AND HOME and DAILY TELEGRAPH AND MESSENGER, one year\$11 00

SOUTHERN FARM AND HOME and WEEKLY TELEGRAPH AND MESSENGER, one year.....\$ 4 00

SEMI-WEEKLY TELEGRAPH AND MESSENGER and SOUTHERN FARM AND HOME, one year.....\$ 5 00

THE SOUTHERN FARM AND HOME and KNOXVILLE WHIG, one year.....\$

THE SOUTHERN FARM AND HOME and TALBOTTON STANDARD, one year.....\$ 4 00

THE SOUTHERN FARM AND HOME and HOME MONTHLY MAGAZINE, Nashville, Tenn., one year.....\$4 00

These terms are only where the money is sent directly to the office, and not subject to any deductions to Agents for commissions.

Address **J. W. BURKE & CO.**,
Macon, Ga.

OUR ADVERTISING RATES are published in full below, for the information of our friends and patrons.

RATES OF ADVERTISING.

One full page, first insertion.....\$25 00
each subsequent insertion.... 20 00
half year.....100 00
one year.....200 00

	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.	9 mo.	12 mo
1 co	15 00	26 00	36 00	45 00	53 00	60 00	80 00	100 00
1/2 "	13 00	22 00	30 00	37 00	43 00	48 00	64 00	80 00
1/3 "	12 00	20 00	27 00	33 00	38 00	42 00	56 00	74 00
1/4 "	10 00	17 00	23 00	28 00	32 00	35 00	47 00	62 00
1/5 "	7 00	12 00	16 00	20 00	24 00	26 00	40 00	54 00
1/6 "	5 00	10 00	14 00	18 00	22 00	25 00	33 00	45 00

Less than 1/6 column, 20 cents a line each insertion.

Bills of regular advertisers payable quarterly in advance. Transient advertisers always in advance.

Papers containing the first issue of each advertisement, always mailed to the advertiser free.

All advertisements should be received here by the 15th of the month previous to that in which they are expected to appear, in order to insure their insertion.

Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are enough liberal.

IT IS OUR PURPOSE, in future, to issue the *FARM AND HOME* on the 1st instead of the 15th of each month, believing that the change will be more satisfactory to our subscribers than the arrangement which has hitherto existed.

The Southern Farm and Home.

MACON, GA., MAY, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - Editor

TERMS:

Single copy 1 year.....	\$3.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy, six months.....	1.00
Invariably in advance.	

INFORMATION ASKED.—We would respectfully, but earnestly request our planting friends to favor us with reports for publication in the *FARM AND HOME*, of their experiments this year with the various fertilizers which they have bought, stating the name of the fertilizer used, how applied, in what quantity per acre, to what crop, on what kind of soil, and with what culture. Vast sums have been spent in these fertilizers this season. It is of the last importance to the Agricultural interest that the information we solicit be furnished and published. All we want is the facts plainly stated.

NEW ONION.—We are indebted to our courteous friend, Mr. James Vick, the famed seedman of Rochester, N. Y., for a package of seed of a new onion called the "Early White Italian Tripoli," which is attracting much attention in Europe, where it has attained an immense size, weighing from two to three pounds, and yet possessing a delicate flavor. Mr. Vick asks us to give it "a fair trial and report." We promise to do so.

PARTIES who send us letters or circulars, inclosing advertisements, if they wish them inserted, would do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we now have, are liberal enough.

"THE GRAPHIC."—We are indebted to Havens & Brown for a copy of "The Graphic," beyond all comparison the handsomest and best illustrated paper we have seen.

PERSONS sending orders for articles advertised in our Magazine, are respectfully requested to state in their order that they saw the advertisement in the *FARM AND HOME*.

SUBSCRIBERS and advertisers will please remit by postoffice order or registered letter. All sums so sent will be at our risk.

The State Fair at Atlanta.

During a recent visit to Atlanta we took occasion to inform ourselves in relation to the State Fair to be held in Atlanta, on the 19th of October and following six days, and especially in regard to the contract between the officers of the State Agricultural Society and the City authorities of Atlanta and the contract of the latter with Mr. H. I. Kimball for the preparation of the Fair grounds, erection of the requisite buildings, and general arrangement of every thing necessary for the accommodation of the Society, the exhibitors and the public.

We cannot commend too highly the liberal and enlightened spirit in which the Mayor and Corporation of Atlanta have agreed to bear the expenses of the Fair, to execute the plans and specifications furnished by the Agricultural Society in regard to the Fair grounds, to the entire premium list, the salaries of the Secretary, Assistant Secretary and Treasurer, to commodate them with ample office room, to all the incidental expenses of printing, etc., to the necessary expenses, travelling and per diem of the Executive Committee, and in short to relieve the Society from all outlay of every description connected with the Fair.

When it is seen by a perusal of the admirably arranged premium list, published on another page, that the premiums of the next Fair will be \$15,000 as compared with \$5,000 at the Fair of 1869, the munificence of the city of Atlanta on the liberal scale upon which all the other arrangements will be made, and the well assured promise of abundant success in the enterprise, we are generally conceded.

We think that the people of Georgia have every reason to applaud the action of the Executive Committee of the Agricultural Society and that of the municipal government of Atlanta. The most confirmed grumbler or croaker can hardly find any thing to disapprove or to condemn.

We also found on examination that the tract between the City authorities of Atlanta and Mr. H. I. Kimball, for the buildings, fair grounds, etc., gives the most satisfactory promise that the work will be done in the best and handsomest manner. Active operations for grading, fencing, building, etc., have already commenced and there is not the least reason to doubt that everything will be completed in ample time. Mr. Kimball will not only do the work so that the requisite accommodation will be furnished but he will do it in a highly creditable manner worthy of the State and of the occasion.

proposes to make the buildings handsome, as well as commodious, tasteful, as well as comfortable, and he has both the means and appliances at his command to make his success certain.

It seems to us ungenerous and unjust to allow Mr. Kimball's imputed politics to prejudice us against him to the extent of condemning the City government of Atlanta for accepting his bid for the arrangement of the Fair ground. Mr. Kimball is a gentleman of enterprise, intelligence, ability, and large means, who has settled amongst us, is spending his money among our people, and is conferring great benefits upon the City of Atlanta, and in that capacity proposes to erect and embellish buildings and grounds for the State Fair, and for such future fairs as may be held in Atlanta, as a business speculation, in the hope, of course, that he will make the enterprise pay.

We do not see what politics have to do with the matter, although Mr. Kimball emphatically denies that he is in any sense a politician. It is a purely business transaction, and if, as we are convinced, Mr. Kimball will do the work more thoroughly, and in better style than any one else, we think we have reason to congratulate the City of Atlanta and the Agricultural Society on their good fortune in securing so competent a contractor, and the State on the prospect that the Fair will be a success.

We see by the papers that Mr. K. has promised Colonel Yancey, five hundred dollars, to be given as a premium for the best bale of cotton exhibited at the Fair.

WE HAVE just received from William Wood & Co., Walker St., New York, *The American Gardener's Assistant*, by Thomas Bridgeman, revised by S. Edwards Todd, and *The American Fruit-culturist*, by John J. Thomas. From the very cursory examination of their contents, which we have had time to make, we regard them as very useful and valuable works, containing plain, practical instructions for the cultivation of vegetables, flowers, and fruits, which may be read with advantage by the beginner and by the experienced gardener. In our next we propose to notice these works at greater length after examining them more closely.

TO ADVERTISERS.—We beg leave to request persons who favor us with advertisements for the *FARM AND HOME* to send them so that they will reach us on or before the 15th of every month.

Fertilisers.

We receive a great many letters asking us to "pitch the into" manufacturers of fertilizers, showing to the satisfaction of the writers how the said manufacturers make 500 per cent. profit, how they adulterate their mixture with worthless ingredients which "weigh like all the world," how they make sand look like bone dust, and how, with a few dollars' worth of guano or other highly ammoniated mixture, they give the "guano smell" to several tons of dirt, which they put up in sacks and sell to the poor farmer at \$70 a ton for cash and \$80 a ton "on time." In short, if half we hear be true, the compounders and vendors of the commercial manures are guilty of stupendous frauds of which the grand juries of their respective counties should take cognizance or be criminally negligent of their duty.

Our correspondents are, we respectfully think, too sweeping in their charges. All manufacturers of fertilizers are not cheats and rogues. We know some who are men of as high character and standing as any in the world, and who are as incapable of committing a fraud in the preparation of their compounds as they are of picking a pocket or forging a note. They certainly do not adulterate their fertilizers nor do they allow others to do so. Whatever they say they contain is certainly there, and if they recommend their compound as a valuable manure, they assuredly believe what they say. But we do not, by any means, assert that all who manufacture fertilizers, offer them for sale, and sell them for "\$70 a ton cash, or \$80 on time," are of this character. We believe that in no branch of business is fraud more frequently or more easily practiced, and none in which it is more difficult to detect it.

The only sure remedy is to purchase fertilizers only from those houses of whose integrity and fair dealing we are confident, and though the "chemical analysis" of others may be very promising, and though it may be warranted to be "the very best manure" for cotton, corn, wheat, oats, barley, rye, peas, and all sorts of garden vegetables, we advise our readers not to buy it at "\$70 per ton for cash, or \$80 on time," unless they know the parties who make it.

The inspection of fertilizers is at best, an insufficient protection, if indeed it be any protection at all. If an inspector had as many eyes as Argus, and as many hands as Briareus, it would be utterly impossible for him to inspect every sack and every barrel of fertilizers that enters his district, so as to ascertain whether it comes up to the declared standard. There is

then no security but in the honor and honesty of the manufacturer.

The complaints of our correspondents as to the high prices at which fertilizers are sold, are to a great extent, well founded. These prices are much beyond their value, even where they are strictly genuine, and manufacturers should be content with smaller profits, as their sales are for cash, or on time, with from 20 to 25 per cent added for interest, the whole secured by a factor's acceptance.

If the manufacturers persist in charging exorbitant prices for their wares, the planters have easy and certain means of redress. If the planters of a county or a district of a county would unite, purchase their own materials at wholesale prices, and manufacture their own fertilizers, they could defend themselves successfully and save enough to compensate them handsomely for their trouble. The ingredients of these manures are no secret, nor are they beyond the reach of any body who has the money to buy them. Their cost is given in every price list, and the machinery and appliances for their mixture need not cost a very large sum. Live and let live is a good rule. It is right that the men who invest their money, their time, and their skill in the manufacture of these valuable auxiliaries of production, should reap a handsome profit from their enterprise. If they make a good, genuine article, they are public benefactors and should have their reward; but that reward should be reasonable, while it is liberal. They have reaped a rich and abundant harvest this year, and can afford to be more generous and more just in the future.

We publish in another column, from the *Farm Journal*, a communication on the subject of guano, and showing how the spurious can be distinguished from the genuine article.

Plant Millet.

We frequently receive letters from subscribers making inquiries as to the best forage crops to plant. We are glad to see this manifestation of anxiety on what we regard as a very important branch of farm economy. It shows that to some extent the seductions of cotton planting have not caused people to forget the claims of their stock, and that their empty lofts and shuck-pens admonish them that it is well to rely on some other sources of supply for food for their mules, horses and cattle, than "Western hay."

We recommend our correspondents to plant liberally, drilled corn and Egyptian Millet on well manured and well prepared land. Cut off

a corner of one of your best cotton fields, where you have liberally applied your favorite fertilizer and have calculated on paper to raise at least a bale to the acre which you will sell for at least 25c. per lb., and plant corn in drills 8 feet apart at the rate of 2½ to 3 bushels to the acre, or sow 1 peck to the acre of well cleaned millet seed on beds 28 or 30 inches apart. Cultivate this patch as carefully as you do your cotton, and we promise you that in the fall you will own that it has paid you as well as the best spot of the same size of all your cotton.

The millet can be cut every three or four weeks, but should be worked immediately after cutting to give the plants a new start. Frequent objection is made that feeding green food to stock produces "scouring." If the millet or corn is cut and allowed to wilt for 24 hours before it is given to the animals and then sprinkled with a little salt, it will not produce any bad effect.

The corn should be cut when the tassel is fully developed, and fed to stock, blades, stalks and all, with a little salt.

Use of Fertilizers in Georgia.

Few people are aware of the amount of Commercial manure that has been used by the planters of Georgia this year. Every body believes that it has been very large, but no adequate idea of its extent can be reached by guess work.

Most of it has been applied to cotton land. Very little of any has been used for provision crops.

In order that our people should be aware of what they are doing—that they may have the facts before them—we sought authentic information as to the number of tons of Fertilizers which have been brought into the State by the various railroads. As yet we have not full returns. We are indebted to Gen. W. S. Holt, the able President of the South Western R. R. to William Rogers, Esq., the efficient Genl. Superintendent of the Central R. R., and to the well known and esteemed President of the Macon & Western R. R., Capt. A. J. White, for the annexed tables, which we think will startle those who are "going in for a big cotton crop and no corn," expecting—though a crop of 2½ millions of bales cotton is selling at 20c.—that a 4 million crop will sell for "at least 25c." If these thousands upon thousands of tons fertilizers do any good at all they must increase the crop ½, and thus with a fair crop year the crop cannot be much short of 4 millions of bales. We expect returns from the Ga. R. R. and the Atlanta & West Point, and will publish them in our next.

STATEMENT OF GUANO CARRIED BY MACON & WESTERN RAILROAD, FROM SEPTEMBER 1st, 1869, TO MARCH 31st, 1870.

MONTHS.	Atlanta.	Jonesboro.	Bear Creek.	Griffin.	Barnesville.	Forsyth.	Crawford.	W & A R. & W P. R.	Total.
SEPTEMBER.....	80,750	.....	.....	395,640	21,180	13,380	.....	38,100	361,870
OCTOBER.....	94,800	1,000	.....	347,490	16,000	108,000	.....	21,900	664,740
NOVEMBER.....	57,800	.....	.....	167,150	42,650	73,700	8,350	17,900	499,080
DECEMBER.....	13,480	2,020	15,870	435,810	43,300	83,300	.....	48,100	903,980
JANUARY.....	46,960	98,260	81,800	447,808	404,360	119,000	.....	20,800	1,687,860
FEBRUARY.....	211,870	173,600	58,660	760,830	943,960	494,100	.....	30,000	4,461,960
MARCH.....	669,400	169,170	211,970	1,006,870	798,590	888,150	163,900	1,788,800	5,806,140
Pounds.....	1,070,000	444,000	370,000	3,410,000	2,364,000	1,662,000	262,000	438,000	14,378,000
Tons.....	836	323	185	1,705	1,183	881	141	219	7,189

STATEMENT OF FERTILIZERS SHIPPED OVER CENTRAL RAILROAD AND BRANCHES, FROM DECEMBER 1st, 1869, TO MARCH 31st, 1870.

	1869. December.	1870. January.	1870. February.	1870. March.	Total.
MACON.....	1,886,260	1,812,650	2,308,165	8,285,950	8,773,025
MACON & WESTERN RAIL ROAD.....	820,007	1,900,082	4,096,368	5,021,085	11,837,487
AUGUSTA.....	2,081,768	1,124,520	1,968,594	8,158,246	8,278,113
GEORGIA RAIL ROAD.....	810,080	845,388	1,656,706	1,208,960	4,521,072
MONTGOMERY & WEST POINT RAIL ROAD.....	242,170	434,628	1,179,920	1,023,860	2,880,076
COLUMBUS.....	916,670	976,045	2,094,562	1,047,860	5,034,137
SOUTH WESTERN RAIL ROAD.....	2,288,880	4,425,429	6,486,204	7,259,788	20,465,801
MILLEDGEVILLE & DATONTON RAIL ROAD.....	848,000	256,000	874,394	981,456	2,404,850
AUGUSTA & SAVANNAH WAY STATIONS.....	117,000	360,000	775,984	642,511	1,895,495
CENTRAL RAIL ROAD WAY STATIONS.....	710,011	3,846,689	5,960,908	6,217,800	16,235,408
GUANO PREVIOUS YEAR.....	9,659,781	15,481,427	27,396,795	28,776,956	82,314,969
INCREASE.....	8,491,911	9,955,488	22,514,876	21,911,670	57,873,990
Increase of about 42 per cent on last season.	6,167,870	5,525,994	4,881,919	7,865,286	24,441,069

Statement of Number of Pounds Guano Transported over the South Western Railroad, from Dec. 1st, 1869, to April 1st, 1870.

Months.	Pounds. Local from Macon.	Pounds thro' from Savan'h and Augusta.	Total Pounds.
Dec	901,487	8,441,720	4,843,157
January.	1,517,594	5,886,100	7,353,694
February	3,822,964	9,760,686	13,083,650
March. ..	3,806,938	9,831,008	12,637,946
Total..	9,048,938	28,869,514	37,418,447

Total No. Tons 18,709.

Shipped same time last season, 19,594,702 lbs.

—Tons, 9,797.

About 91 per cent increase over last season.

If we estimate the sum paid or promised to be paid for this amount of fertilizers at an average of \$60 per ton, we will find that, unless we really get 25c. a pound for our cotton and the western grain sellers and pork packers are very reasonable in their demands, "a big cotton crop" is not so desirable as many of us think.

It is not the liberal use of fertilizers to which we object. On the contrary, we earnestly recommend their use. But we wish to see them employed to make our people self-supporting, independent and rich, and not for the purpose of growing an immense cotton crop to enrich the spinners of New England and Lancashire at the cost of our own ruin.

WE REQUEST subscribers not to send us local bills not current in Macon, or torn currency which we cannot use. Remit by Postoffice order, Registered letter or by Express.

[We commend to the careful perusal of our readers the following review of Mr. Boykin's "Memorial Volume of Hon. Howell Cobb," from the pen of a distinguished scholar and eminent divine than whom there is no more competent literary critic. We wish that we were at liberty to publish his name.]

A MEMORIAL VOLUME OF THE HON. HOWELL COBB.

EDITED BY SAMUEL BOYKIN. PHILADELPHIA: LIPPINCOTT & CO. 1870.

This volume is precisely what its name indicates, "*a memorial tribute*" to the distinguished man whose name it bears. It is not therefore a biography nor a memoir, but simply "*an outline sketch*" of the life of General Cobb. It is not a full portrait, but a profile. Yet the contour is so well given—the broad and massive lines so boldly drawn—the marked individuality so thoroughly presented, that no one can fail to recognize the comprehensive insight, the vigo-

rous fidelity, and the tenderskill with which the work has been done.

What we specially admire in this volume, is the tone of genuine simplicity diffused throughout its pages. It is full of that deep, but quiet feeling, which is so akin to our highest thoughtfulness, and which expresses itself as if mindful of the near presence of the loved and honored dead. Without a touch of fulsomeness or extravagance, it sets forth the eminent qualities of its subject; and while it has warmth of color sufficient to satisfy the demands of friendship, it has none of the glare of adulation nor the faintest tint of romantic eulogy. One can easily see where even truthful enthusiasm might have uttered stronger language, but it is silently repressed and the rising pathos is returned to the still fellowship of the heart. In this respect, no work of its class is freer from defect. The "*besetting sin*" of writers and speakers who commemorate the illustrious dead is rigidly avoided. Neither taste nor conscience is wounded by over-statements. The spirit of the Funeral address is highly commendable for the calm and dignified candor which animates the vivid delineations of Gen. Cobb's character and life; while the testimonies from his brethren of the Bar and the Legislative Hall evince the same characteristic of genuine integrity of thought and entire justness of sympathy. Herein, we think, this volume is singularly admirable. If it had no other excellence, this would secure it the praise of rare merit—a merit too shared by the living and the dead—for what can be more significant of the hallowed worth of a departed friend, than that he inspires his surviving companions to utter such words as these, or what better proof of their manly capacity of appreciation than these honest and touching tributes to his memory!

The main merit of this volume lies in the uniform impression it makes of the specific qualities of Gen. Cobb's intellect and character. Books of this kind generally lack that unity which biography, like every form of art, must observe, to be complete and satisfying. One aspect is set aside or is overlaid by another. The views of one, presented from his habitual point of observation, do not blend with those of another. This often occurs even where the man is so marked as to define himself with something like totality to all close observers. On this account, biography requires, more than any mode of writing, both the judgment and active creativeness of a single mind. Yet, in this case, the difficulty has been obviated—so much so that any

one not personally acquainted with Gen. Cobb may obtain quite an accurate idea of those traits by which he was so strikingly and, indeed, brilliantly individualized. The volume shows very clearly, that he was the same man to all who shared his intimacy, and surely this of itself is the highest praise of such a character.

Like all great men, Gen. Cobb had truthful, vigorous, determinative instincts. Fortunately for him, he was never educated out of them, nor did society and books distort and pervert them into artificial subserviency to their standards. From first to last, he was an instinctive thinker; from first to last, an instinctive actor; and therefore, so persistently natural in all his modes of thinking, in his tastes, in his methods of acting upon other minds. Like a mighty river, the currents of his intellect cut out their own channels and kept within their banks, obedient to their own supreme gravity. Books did affect him. So did persons; and at times affected him so powerfully as to turn him in a new direction. Yet even then, those familiar with his mind, could very plainly see that the change had taken place, because some deeper instinct, some latent element of capacity, had been suddenly evoked in extraordinary action. For one thrown so early into public life and kept so constantly in the midst of its excitements, it was remarkable how he retained his broad openness of nature and that simple and untought hospitality of intellect which acted so freely through his genial sympathies. Few men cared less for the petty arts and puerile mannerisms, with which, as with a masochism, public characters clothe themselves. His diplomacy was of the school of Franklin, plain, straightforward, and eager for the heart of things. He employed no dexterity except in its rightful use of guarding himself and a cause he defended against the insidious chicanery of others. He had no disguises. He exaggerated himself by no pretensions. He delighted in none of those occult fascinations through which demagogues and statesmen of chronic depravity, glide stealthily to their ends. Nor, on the other hand, had he any of that excessive transparency which is simply concealment in a worse shape. Between these extremes, typical of the two ruling classes of politicians, he was finely balanced, and hence, he had the confidence of statesmen as well as of the people. Akin to these robust attributes, was that easy independence which became him like an inborn grace. It was one of the sturdiest of his virtues. It saved him from unmanly compliances and equally too from unmanly dogmatism. Yet with it, he was consid-

erate of the opinions, and even of the prejudices of others; watchful lest the earnestness of his own convictions should alienate his feelings from opposing parties; and careful in all things to guard the virtuous love of truth from degenerating into the vice of intolerance.

No one who knew Gen. Cobb, could doubt the existence of these virtues as the solid substratum of his character. They belonged to his nature and hence were organic in his character. Without doubt, much was due to that fine temperament which fed his mind from its hidden sources—a subtle force of which we know nothing. In this particular, he was nobly organized. He had a temperament of vigorous elasticity. It breathed an atmosphere full of "*the wine of life*," rejoiced in the great and open spaces of sunshine, welcomed the luxury of homely pleasures, and exulted in that perfected innocence of earlier years which is Time's best gift to mature manhood. Happily for his usefulness, he had nothing morbid in his strong nature—nothing austere—and as a necessary result, nothing mean and vindictive. Among the men of our day, we recall no one who was less indebted than he to the lower and more malignant constituents of human nature for the excitements, aye, the inspirations that make talent and genius so formidable. These inspirations, we all know, come frequently from below—oftener thence than from above; and we know furthermore how hard it is for public characters to resist their aid. Alas, too many of them are content to exert power on any terms! A dash of satanic virulence in sarcasm, in spite, in keen resentment, is rather coveted than otherwise in the gladiatorial sports of the intellectual arena. But this was not Gen. Cobb's temper. It was not his temper because his temperament was inconsistent with any such infernal delight. And hence, his power as a leader. Men trusted him because he was thoroughly self-poised and as thoroughly self-contained. They knew him to be prudent and they relied on his prudence for the reason that it was a prudence guaranteed by principle. This trustworthiness, the commanding virtue of all leadership, was further enhanced by the uniform tenor of his thoughts and feelings. He was seldom other than himself. He had no oblique moods, turning him out of his true line of movement. Rarely have political leaders been so free from those sudden caprices and fitful impulses which often prove fatal in the management of great issues. Where self-denial was a mere matter of expediency, we frequently knew him practice it with instant readiness;

and where it was imperative on its own ground and for its own sake, he met its obligations with the calm and resolute will of a hero. And who of us can ever forget the home-like air he wore in his great moments when the duty of a critical hour could only be bravely done or done not at all? This awakened no wonder in us, for we knew, that, "*In himself was all his state.*"

The intense realism of his mind was in nothing more apparent than in his undisguised dislike of all metaphysical abstractions. Under some circumstances, this went so far as to abate (as it seemed to us) his appreciation of certain truths which rest on evidence too subtle for palpable demonstration. He delighted in facts and in such truths as lay couched in facts, but those other truths that are remote from every day phenomena, waiting to become facts when the world has become ready for their advent—such truths as verify themselves to consciousness but are dreams to the senses—these had no charm for his intellect. Attenuated logic, led off under an "*a priori*," he could hardly tolerate. Whether listening or speaking, the representative feature of his mind was a love of downright facts. He had the genuine Anglo-Saxon passion for absolute realities. If he had belonged to the House of Commons, he would have won a reputation even higher than he acquired in the American Congress. In the type of his intellectual structure, he leaned much more towards the best English standard of statesman-like ability, than towards the American.—Maxims, axioms, creeds that treasured old precedents, firmly-bottomed principles, arguments that lay close alike to premise and conclusion; these made the staple of his reasoning. Accordingly, his mind was in the truest sense a popular mind. Although he stood far above the intellect of the day, yet he was by native bent no less than by acquired culture, a man of the people, a man to interpret the people to themselves, a man competent to take their level that he might lift them unawares to his own.

How far Gen. Cobb had sagacity, the pre-eminent quality of a statesman, it is too early to determine. If the measures of statesmanship justify themselves in their own day, it is certainly a strain on language to call them instances of sagacity. Better designate them by the name of shrewd prudence or the sharp forethought that sees across a short period into the future, simply because that future is already embryonic in the transitional present. Sagacity, true and profound sagacity, has a distant range, a broad range, a comprehensive range. Its integral ele-

ment is the skill to read circumstances in their remotest sequel; to combine them into form and substance; to see which of them are nascent shapes of permanent law and which are circumstances proper and hence incidental and transient. For this reason, a contemporaneous estimate of sagacity is of all judgments, the most uncertain and unreliable. Yet, allowing for this fact, it is hardly possible to avoid forming some opinion on this subject. Argue as we may on the abstract question, we will involuntarily test a statesman by this final touchstone of supreme ability. Now, we think, that in all those practical matters, in which the conditions of foresight were attainable, Gen. Cobb showed the sagacity of a master-mind. The principles, measures, and policy which he advocated so long and so well, gave to this country a large measure of the prosperity and strength that for half a century it enjoyed. Nor was he deficient in that sensibility which partly of the intellect and yet more of the heart, feels beforehand the changes silently and slowly transpiring in the public mind. It was here that his acute instincts rendered him such effective service. Here, too, lay his wisdom as an adviser and counsellor; and here too his promptness and decision as a leader. If the kind of prescience possible to a fallen being like man is more a constituent of his moral nature than of intellectual organization; if it reach its conclusions rather by feeling than by formal logic; if it is self-directed and self-supported, following the lead of its own suggestions and often unable to account in terms of set speech for its strange impressions; it would seem natural that a man of Gen. Cobb's peculiar constitution should have no small measure of this practical insight into the movements of the age. We say, practical insight, for we mean by these words to indicate the specific sort of forethought which he possessed. None can claim for him the kind of philosophic prescience, Burke had when he, the only man in England, read the French Revolution from the beginning to the end. Yet Gen. Cobb had the sagacity that springs from those intuitions of a broad and comprehensive understanding, through which the moral nature operates as the final interpreter of truth and fact.

The last years of his life are touchingly interesting because of the light they throw on his true character. A man who at fifty is suddenly separated from all his old interests; who is compelled to surrender every impassioned object of his worldly ambition and see the portals of his proper sphere closed forever against him;

and who at the same time has to gather up the wrecks of fortune and start life anew; such a man is certainly subjected to an ordeal, than which nothing can be severer. Yet he stood this searching scrutiny; he bore this sharpest trial; he stood it grandly; he bore it heroically. Chastened in spirit, subdued to calmest reflection, yet not broken or even bent under the pressure of aggregated calamities, he was still as before firmly true, firmly brave, moderate and self-possessed and patiently hopeful, looking serenely across the intervening gloom to the straggling light of a better to-morrow. Those were days when our men saw through one another, when a fraternity of sorrow brought all our hearts closely and tenderly together, and when mutuality of forbearance was even more necessary than common offices of social sympathy. And who that recalls them to strengthen his fidelity and cheer his fortitude, can forget him who brought unwasted to private life the manly purpose, the temperate fervor, the quiet hopefulness, the stern resolve, the majestic bearing of other, but not sublimer hours? "*Yet to the last thou wast a King.*" And then followed the most thoughtful and earnest days of his life, whose record is on high, but whose memory is to all his friends most precious. The struggle past; the strife of doubt ended; the final repose of the yearning spirit attained in the assured reconciliations of the heart to its Redeemer and Lord; what was it all but the hallowed prelude to his sudden death!

CORRESPONDENCE.

Our Water Power—Barnett's Shoals, Clarke County, Ga.

ATHENS, GA., April, 1870.

Mr. Editor:—At your request I send you a partial description of Barnett's Shoals in this county. This splendid water power, situated in the county of Clarke, is, perhaps, in some respects, almost unrivalled in natural advantages. Until we made a recent survey for the present proprietors, no estimate by any measurements had ever been made that is now known of. It has been in the hands of its late owner, George W. Veal, for about 20 years, and the only attempt to utilize this vast power was a small grist mill, only a vestige of which now remains to mark the spot where it stood; and later still a gin house, the wheel driven by water from the river, and that now stands idle. The Oconee river furnishes the water after its branches come together and about 3 miles below the fork.

The falls are situated 9 miles below Athens, with an excellent road to that place, about $7\frac{1}{2}$ miles from the Georgia railroad, 3 miles above Lexington Depot, and 5 miles from Watkinsville, the county seat, with a splendid country road to that place. The entire fall is 60 feet and 9 inches at lowest stage of water. The river, about 100 yards above the shoals, is 250 feet wide. Immediately at the head, it spreads out to 750 feet and breaks over a smooth, broad ledge of granite, forming the most splendid natural dam that ever was seen anywhere. For three quarters of a mile the river is a series of tumbling and roaring rapids, with numerous beautiful islands, some of them large enough for building sites, and entirely above the highest water. The average width of the river being about 600 feet to the foot of the shoal; where it contracts again to about 200 feet.

On the north east side of the river are numerous advantageous sites for mills and factories. The first site is about 2,000 feet from the head, to which point a canal 50 feet wide and 6 feet deep is entirely and perfectly practicable, and with but small expense compared with such work generally. Here are sites for 3 large mills with working heads of water of 30, 25, and 20 feet respectively, so that a power of nearly 1,000 horses can be safely guaranteed at that point. About 2,000 feet farther down another site occurs, which, with a dam 5 feet high and 100 feet long, and another canal of 1,400 feet in length, the same water can be used again under a head of 25 feet, with sites for 8 or even 4 first class mills. The power here may, with utmost safety, be guaranteed at 1,000 horses more. The valley of the river is wide, and the hills gradually sloping back, so that there is no lack of light, and through the whole length of the shoal, the finest building stone abounds, a large amount of it ready split by nature for the builders' hands. There are 500 acres of land attached to this property, with springs of the finest water everywhere abundant. There is also a large amount of original growth timber on the premises, and still larger bodies contiguous and of easy access.

If, at some future day, our friends in Savannah should conclude to extend a branch of their railroad from Eatonton to Madison and on to Athens, and thence to Rabun Gap, this property would be nearly directly in a line and certainly not an impracticable route to follow directly through the shoals, and thence following the river up to Athens. Such a road would

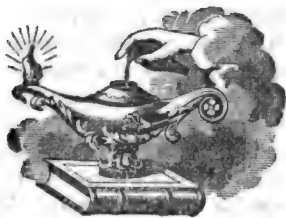
throw into Savannah a large amount of manufactured goods from *factories now in operation*—at “Scul Shoals,” (Poullain’s,) “The Georgia,” owned by John White, Esq., the “Princeton Manufacturing Company,” and the “Athenas;” also the “Pioneer Paper Mills,” a first class establishment recently enlarged and improved. All of these would be within easy access of such a railroad connection, and if our Savannah friends will look into the matter we are sure they will soon become alive to the advantages of this connection. We want another outlet, and we want a direct route to the sea.

There is an aggregate of 5,000 available horse power in and around Athens. All of it is within a circuit of 10 miles, and the whole within easy access of such a railroad connection. No portion of our State can excel us in this respect, and a large amount of this power is now in successful operation. Still there is room for more. We are in the midst of a good cotton region, and where the cotton is brought to our doors without cost. Our mills can be run with very little cost for heating—a heavy item of expense for our Northern friends, and labor is just as cheap with us as with them.

The property above described as Barnett’s Shoals is now in the hands of Dr. Jas. S. Hamilton, Wm. J. Russell and associates with a view to its improvement.

McCULLOCH & HUDGIN, ENGINEERS.

Literary Department.



EDITOR'S BOOK TABLE.

Sterling's School Books, of which we received a full set from J. W. Burke & Co., who have them for sale, are, by many degrees, the best books of their kind which are published in America. We have examined them carefully, compared them with the school-books of other publishers, and, therefore, pronounce a deliberate judgment.

The series comprises six volumes: the First, Second, Third, Fourth, and Fifth Readers, and the Southern Orator,—all admirably prepared,

the instruction skillfully graduated, so that the student advances only as rapidly as he can do so understandingly, and the selections compiled so as to interest the youthful readers, and at the same time afford them valuable information and sound moral instruction. It is only necessary to state that these books have been compiled by Professor Richard Sterling, Principal of the Edgeworth Female Seminary, to guarantee their excellence and commend them to general adoption in every Southern school. The Professor's patriotism and devotion to the South in her day of adversity, and his ripe scholarship are well known.

These school books are published by Alexander Agar, (formerly Owens & Agar,) of New York, one of the best and most successful publishers in that city, and richly deserving of the support of all Southerners, for the active and generous sympathy which he extended towards us when Northern “friends of the South” were few and far between.

Winchell's Sketches of Creation. (Harper & Brothers, for sale by J. W. Burke & Co.,) is a most interesting and valuable book, deserving richly a widespread popularity. It is a history of the creation of the world, tracing its progress through its various successive changes, until the Almighty hand fashioned it as a habitation for man. It is written to suit the popular taste, or rather adapted to the popular comprehension—not a learned treatise filled with technical expressions only comprehensible by the geological scholar, and with original theories of which the truth is frequently sadly disproportionate to the originality.

When Dr. Winchell, (Professor of Geology, etc., in the University of Michigan,) leaves the history of facts and turns to explore the future, describing the condition of the world when the sun shall have ceased to light and warm it, when the end shall have come, and Campbell's fanciful description of the “Last Man” shall have become a reality, he is very eloquent, intensely powerful, but, of course, highly imaginative, although he takes the indications of science as the basis of his description. His book, throughout, is written in the spirit of an earnest Christian, and unlike many works,—we might say most works—of a similar character, he discovers no discrepancy between science and religion, but on the contrary, without any elaborate argument, treats them as in perfect harmony.

The work is profusely illustrated by wood engravings designed to explain the text.

The Journal of a Visit to Egypt, Constantinople, the Crimea, Greece, etc., by the Hon. Mrs. William Grey, (Harper & Brothers,) is a simple, graphic, well written, and extremely entertaining little book. Mrs. Grey, who is attached to the household of the Princess of Wales, accompanied the Prince and Princess in their tour in the East, and, like many ladies of fashion, kept a diary in which, for the amusement of her friends, she kept a faithful record of all she saw and heard in the "land of the East—the clime of the sun," where Byron has said "all save the spirit of man is divine. The diary was not intended for publication, but was given to the press without her consent by her brother-in-law, General Grey, to whom she confided the manuscript, and to whom, therefore, we are indebted for a very pleasing book in which oriental life, as few strangers have the opportunity to see it, is well and graphically drawn.

The Mysteries of Masonry, being the Outline of a Universal Philosophy founded upon the Ritual and Degrees of Ancient Freemasonry, by L. E. Reynolds, P. M. (J. B. Lippincott & Co., Philadelphia, and for sale by J. W. Burke & Co.,) displays a vast amount of research, great originality of thought, a profound belief of the author in the truth of his hypotheses and deductions, and wonderful ingenuity in the blending of apparently incongruous material. In describing the purpose of his work Mr. Reynolds says:

"The reflecting mind may at once see that all created things run in series and degrees, as end, cause and effect, that the effect, when carried into uses, becomes the foundation of other causes and effects. Thus, that the universe is a system of uses, causes and effects, consisting of a series of three, six, nine and twenty-seven; with their attendant orders of three, five and seven, in likeness of the degrees of Ancient Masonry. The object of the present work is to unfold a knowledge of these degrees in the creation of the universe, and the regeneration of man agreeably to the principles of science as far as they have been developed."

The religious meaning of the symbols of Masonry, the high order of morality which it inculcates and enforces, the constant charity which it practices, the harmony between the principles of science, the divine truth of religion, and the "Mysteries of Masonry," are demonstrated in the work before us. It will be read with interest, and even where it fails to convince it will excite good thoughts and leave good impressions.

Our Saturday Nights, by M. M. Pomeroy,

("Brick Pomeroy,") published by Carleton, New York, is a series of pathetic tales descriptive of domestic life, written with a tenderness and sympathy which one accustomed to read the columns of the *LaCrosse Democrat* and the *New York Democrat* would never attribute to the author.

Each tale contains a wholesome moral, teaching charity, forbearance, brotherly love, resignation, contentment and the uses of affliction.

We have seldom read a book with more emotional interest than Brick Pomeroy's "Saturday Nights."

The Andes and the Amazon, by James Orton, Professor of Natural History, Vassar College, (Harper & Brothers,) is an account of a scientific expedition to the equatorial Andes and the valley of the river Amazon, which was fitted out in 1857 under the auspices of the Smithsonian Institute, and of which Professor Orton was the leading member. The volume before us gives a well written, well arranged narrative of the incidents of the expedition, and a comprehensive detail of its results. It describes an almost unexplored region, corrects the mistakes of those who had previously attempted partial explorations, and gives most valuable information as to the natural history, manners, customs, geography and resources of a country of which so little is known, and which, at no distant day, must become so important to the commercial world. The numerous illustrations with which the book is embellished are spirited and well executed, and the binding and typography leaves nothing to be desired.

Hammer and Rapier, by John Esten Cooke, (Carleton, New York,) contains a series of rapidly drawn, highly colored, but, in the main, truthful pictures of the chief battles of the army of Northern Virginia, of many of which the author was an eye witness. He is, we think, rather too partial to Virginia and the Virginians, to the extent of ignoring altogether the services of distinguished soldiers from other States, whose name and fame should never be forgotten when allusion is made to the glorious exploits of that glorious body, the army of Northern Virginia. We cheerfully concede the full meed of praise due to Virginia and those of her sons, from the illustrious chief, Robert E. Lee, to the humblest private in the ranks, who did their whole duty in the defence of the independence of their country. We cordially echo every word Mr. Cooke has written in their praise, but we think that, in attempting to describe the first battle of Fredericksburg, the failure to make

even passing mention of General Thomas R. R. Cobb, whose brigade held the position at the intersection of the plank road with the telegraph road, and who, after the victory was won and the enemy repulsed, received his death wound on that bloody field,—is a very serious and scarcely pardonable admission. There are many other serious though less glaring inaccuracies in "Hammer and Rapier," all of which are to the detriment of soldiers of other States, and to the advantage of those from Virginia. Notwithstanding these defects, which are much to be regretted, the book is entertaining. In future Mr. Cooke would do well to remember that the monument which has been reared in every Southern heart to the memory of Virginia heroes, cannot be embellished or enlarged by destroying or defacing those monuments which have been erected in honor of the heroes of other States, whose memory is, and ever will be, cherished and revered, even though they have not been permitted to occupy a niche in Mr. Cooke's pantheon.

Of The Unkind Word and Other Stories, by Miss Muloch, (Harper & Brothers,) it is only necessary to state that they are by the author of "John Halifax Gentleman," to give the assurance to the reading public that the book is a good one.

Red as the Rose was She, by the author of "Cometh up as a Flower," (D. Appleton & Co., and for sale by J. W. Burke & Co.,) is one of the best sensational novels of the day. We tried in vain to discover any connection between the title of the book and any of the characters, but suppose that in the progressive age in which we live, we ought not to expect that the title should have any relation to the book. It is well written, however. The self-sacrificing devotion and noble generosity of the simple-hearted Robert Brandon; the frivolity, want of moral courage, worldly-mindedness, punishment, repentance and subsequent happiness of Esther, the heroine; the impassability, illnature and intense propriety of Constance Blessington; the thoughts and acts of St. John Gerard, his hopes and disappointments, and the remarkable picture of the domestic life of Sir Thomas and Lady Gerard and of Mr. and Mrs. Blessington—are clearly drawn, even though they may be often pronounced to be unnatural.

The Rule of the Monk; by General Garibaldi, (Harper and Brothers) is a ferocious attack on the Papal Government and the Roman Catholic priesthood, whom the General destroys in a lump as "assassins of the soul," filled with

"malignity and buffoonery;" and certainly if the General's description of the secret life of the Roman priests be even partially true, he is not wrong in denouncing them as a "lying and mischievous institution." We rather think, however, that Garibaldi's anxiety to complete the "regeneration of Italy" by the destruction of the Papacy, makes him a prejudiced witness, and betrays him into the utterance of slanderous statements too extravagant for belief.

Harper & Brothers have also sent us the following new novels, *Hirell*, by the author of "Abel Drake's Wife;" *Under Foot*, by Alton Clyde, *So Runs the World Away*, by Mrs. A. C. Steele, and *Caleb Williams*, by Godwin. We must defer notice of these books until our next. We have not had time to examine them, nor if we had, have we space to express our opinions.

Mrs. Gerald's Niece, by Lady Georgiana Fullerton, (D. Appleton & Co.,) for a copy of which we are indebted to J. W. Burke & Co., is also on our table, to be noticed in our next.

We have no more welcome or agreeable weekly visitor than *Appleton's Journal*. It is now publishing "The Lady of the Ice," by James De Mille, "Ralph the Heir," by Anthony Trollope, and Chas. Dickens's new serial, "The Mystery of Edwin Drood," besides an abundantly supplied feast composed of matters relating to Literature, Science and the Arts.

Harper's Magazine, for April and May are before us. General McMahon's sketch of the War in Paraguay; the paper on Count Bismarck, Around the World on Skates, Anteros, by the author of Guy Livingstone, and the continuation of the papers on Frederick the Great, are excellent, and well worth reading.

Lippincott's Magazine has a well filled table of contents; but there is one nauseating dish upon it, which destroys our relish for the other wholesome viands. We allude to Pollard's disgusting contribution, "The Negro in the South," in which mendacity, malignity, ignorance and impudence raised to the nth power display themselves in all Pollard's undisputed proficiency in the employment of those unpopular attributes. The man who never having seen President Davis except passing in the street, who never spoke one word to him, and never had any opportunity of knowing anything about him, would have the audacity to write the "Life of Jefferson Davis," is fully capable of writing from a garret in New York, or from behind a desk in the Custom House, a vivid description of the present condition and status of the negro

in the South, in relation to labor, society, morals, and politics. He knows as much of the negro as he does of President Davis. His motive is the same in both literary efforts—to malign and vilify the South, and his object is also identical—a few dirty greenbacks purchased at the cost of everything which a decent man values.

The *New Eclectic Magazine*, for April, published by Turnbull and Mardock, Baltimore, is an excellent number of one of the best periodicals published at the South. The criticism of Lord Lytton's *Horace*, by Prof. Gildersleeve of the University of Va., will well repay perusal.

The *American Agriculturist* for April, like that for March and that which will appear in May, is brim full of valuable and instructive reading. Its bold and honest war on all "hum-bugs" commends it specially to popular confidence.

No. 1. Vol. 2, of *the Accountant and Advertiser, a Journal for the Farm, Counting Room and Fireside*, published at Baltimore, by the Baltimore Publishing Company, on the 1st of every month at \$1 per annum, reaches us in a brand new dress, in quarto form and containing 16 pages of able original and selected matter. It is well edited and beautifully printed.

The *New England Farmer*, for April (Eaton & Co., Boston,) has a very interesting article on the building and arrangement of barns.

We commend the *Home Monthly*, (A. B. Stark, Nashville, Tenn.) to popular support. The contents of the last number are more than ordinarily interesting.

We are sincere admirers of pastoral poetry. There is not much of it now-a-days, but occasionally we find a gem.

One Jones has recently written, and what is better, published a sonnet to his mule, which commences as follows:

"Yes, my mule, your ears are longer"

"Than when roses decked your cheek."

It is reasonable to suppose that this is true, if Jones' mule has any ears at all, and it is also to be supposed that in all Jones' future poetical apostrophes to his mule he can, with truth, make the same remark.

The *American Grocer*, which is now published weekly, is a very useful paper, filled with valuable information to the business man, full market reports, useful tables, and well selected and interesting miscellaneous matter. It is published by John Darby, William Street, New York, at \$3 per annum.

Premium List of the Georgia State Fair.

The Secretary of the Georgia State Fair publishes the subjoined list of premiums upon essays and field crops. It is published at this early day, that farmers intending competing for the prizes may pitch their crops intelligently.

1. For the best essay on the culture of cotton, \$50.
2. For the best essay on the culture of corn, \$50.
3. For the best essay on the culture of wheat, \$50.
4. For the best essay on the culture of grasses and forage plants, \$50.
5. For the best essay on the value of cotton seed as plant and animal food, with description and estimate of machinery necessary for its preparation, \$50.
6. For the best essay on the improvement of land by the turning in of green crops, in comparison with other modes of improvement, \$50.
7. The best essay on the practicability and profitableness of manufacturing the cotton crop of the South within our own limits, \$50.
8. For the best essay on wool growing at the South, \$50.
9. For the best essay on the profitableness of raising thorough bred stock, \$50.
10. For the best essay on draining, \$50.
11. For the best essay on irrigation, \$50.
12. For the report of the most profitable farm: the report must give full statements of its management; the value of the land per acre; the number of acres in cultivation; the value of every animal used in cultivation; the whole expenditure of money for the year; quantity of each farm product raised; amount of money received; full details in every respect; whole net profits. In determining the question of the most profitable farm the cost of improvements in buildings and the value of woodlands are not to be considered as part of the investment in the farming operation, but only the value of the cultivated land. Premium, \$50.

PLANTATION AND FARM—FIELD CROPS.

1. For the best ten acres of cotton, \$50.
2. For the best ten acres of corn, \$50.
3. For the best ten acres of pea vine hay, \$50.
4. For the best ten acres of clover hay, \$50.
5. Largest crop of cotton produced upon two acres of upland, with the mode of cultivation, the amount and kind of manure used, the period of planting, the number of times plowed and hoed, the kind of cotton; the land to be measured and the cotton weighed in the presence of three disinterested and reliable witnesses, with certificate from them, silver pitcher, worth \$50.
6. Largest crop of pea vine hay raised on one acre, one bale to be sent as a sample, with a certificate of quantity made, not less than two tons, one bale of which must be on the ground, silver pitcher, worth \$20.
7. Largest crop of native grass hay raised on one acre, the same as above, silver pitcher, worth \$20.
8. Largest crop of foreign grass hay raised on

one acre, the same as above, silver pitcher, worth \$20.

9. Largest crop of corn grown upon two acres of upland, not less than seventy-five bushels per acre, conditions same as for cotton, silver pitcher, worth \$50.

10. Largest crop of corn grown upon two acres of lowland, not less than one hundred bushels per acre, conditions same as above, silver pitcher, worth \$50.

11. Largest crop of wheat, broadcast, grown upon two acres of land, not less than 20 bushels per acre, nor under 60 pounds per bushel, conditions same as above, silver pitcher, worth \$25.

12. Largest crop of wheat, drilled, grown upon two acres of land, not less than twenty bushels per acre, nor under sixty pounds per bushel, conditions same as above silver pitcher, worth \$25.

13. Largest crop of lowland rice on one acre, not less than one hundred bushels, silver pitcher, worth \$50.

14. Largest crop of oats, kind, etc., raised per acre, silver pitcher, worth \$20.

15. Largest crop of rye, kind, etc., raised per acre, silver pitcher, worth \$10.

16. Largest crop of barley, kind, etc., raised per acre, silver cup worth \$10.

17. Largest crop of sweet potatoes raised per acre, one-eighth of an acre to be dug, and certificates of the yield by disinterested persons furnished, silver pitcher worth \$20.

18. Largest crop of Irish potatoes raised per acre, silver pitcher worth \$20.

19. Largest crop of turnips raised per acre, silver pitcher worth \$10.

20. Largest crop of ground peas or pinders, raised per acre, silver cup worth \$10.

21. Largest crop of field peas raised per acre, silver cup worth \$10.

22. Best box of chewing tobacco, Southern raised, plate or \$5.

23. Best box of cigars, from Southern raised tobacco, plate or \$5.

24. Best sample of Southern raised smoking tobacco, plate or \$5.

25. Best sample of leaf tobacco, five pounds, plate or \$5.

[Exhibitors of all the above crops must state in writing, in full, to the Secretary, all the requisitions as laid down for corn, cotton, etc., as above, when the articles are entered upon his books for exhibition, with the witnesses' certificates for the measurements of lands, and pounds and bushels per acre, without which the Judges will be required to withhold their awards; and the exhibitors not complying with these requisitions will not be allowed to compete for the premiums of the Society.]

CROPS BY BOYS UNDER SIXTEEN YEARS OF AGE.

The rules for field crops to be complied with.

1. Largest quantity of Indian corn grown by any white boy under 16 years of age, upon an acre of land, a patent lever silver watch worth \$25.

2. Largest quantity of cotton produced by any white boy under 16 years of age, upon an acre of land, a patent lever silver watch worth \$25.

SAMPLES OF FIELD CROPS.

1. Best variety of bread corn, with two bushels as sample, plate or \$5.

2. Best variety of corn for stock, two bushels as sample, tested by weight, plate or \$5.

3. Best variety of wheat, with a bushel of grain as sample, plate or \$5.

4. Best variety of sweet potatoes, sample of two bushels, plate or \$5.

5. Best variety of field peas, sample of one bushel, plate or \$5.

6. Best table pea, plate or \$5.

7. Best variety of sea island cotton, with two stalks as samples, plate or \$5.

8. Best bushel of rice, plate or \$5.

9. Best bushel of oats, plate or \$5.

10. Best bushel of rye, plate or \$5.

11. Best bushel of barley, plate or \$5.

12. Best bushel of Irish potatoes, plate or \$5.

13. Best variety of grass seeds adapted to the South for hay or grazing, plate or \$5.

[Exhibitors of crops must give in writing to the Secretary a full account of each crop offered—its adaptation for profitable cultivation, etc. Exhibitors of hay must give the mode of cultivating, caring, harvesting, etc.]

SUGAR AND SYRUP.

1. Best barrel of sugar of ribbon and green cane, raised in Georgia, \$25.

2. Best barrel syrup, same cane, raised in Georgia, \$10.

3. Greatest yield of syrup, per acre, same cane, \$10.

4. Greatest yield of sugar, per acre, same cane, \$10.

5. Best barrel sugar from the sorgho or China or African sugar millet, \$25.

6. Best barrel syrup from the same cane, \$10.

7. Largest yield of sugar per acre from same cane, \$10.

8. Largest yield of syrup per acre for same cane, \$10.

COTTON BALES.

1. Best 20 bales of common upland cotton, silver pitcher worth \$20.

2. Best ten bales of common upland cotton, silver pitcher worth \$15.

3. Best five bales of common upland cotton, silver cup worth \$10.

4. Best one bale of common upland cotton, plate or \$5.

5. Best one bale of upland cotton, long staple, silver cup worth \$10.

6. Best five bales sea island cotton, silver pitcher, \$20.

7. Best bale (400 lbs.) sea island or black seed cotton raised upon upland, silver pitcher, \$25.

8. Best 2 stalks of cotton, silver cup worth \$10.

[When the premium is for more than one bag, samples of all the bags but one (which must weigh 450 pounds and be on the ground) must be made by disinterested individuals and produced on the ground with their certificates. Where the premium is for one bag, that must be on the ground.]

Vol. I. No. 8.

At con



THE
SOUTHERN

FARM AND HOME



1870
JUNE, 1870.
W. M. BROWNE, Editor.



PUBLISHED BY
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MACON,
GA.



1870

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"HALE'S EARLY" PEACH.

SOUTHERN FARM AND HOME:

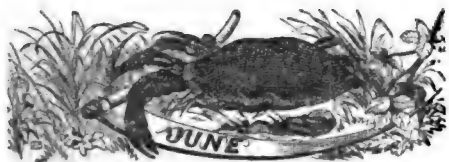
A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., JUNE, 1870.

No. 8.



FARM WORK FOR THE MONTH.

The engagements of the agriculturist during this month are pressing, various and important. He ought not to have an idle moment, even though he commences the month having achieved a complete victory over his most insidious foes, grass and weeds.

CORN.

During the next thirty days corn will have received its last working, and will be laid by. Great care and judgment should be employed in performing this work. To throw fine soft earth about the roots and thus increase their depth beneath the surface, without cutting or bruising any of them, and to cover up all the grass and weeds so as to have the crop perfectly clean is the object to be attained. If it be possible this work should be done when the soil is moist and in good plowable condition, and if the previous plowings have been deep and close, and if the hoes have done their entire duty, a fine crop of corn may be expected, large enough, we earnestly hope, to make it reasonably certain that this time next year, farmers may not be paying from \$1.50 to \$1.75 per bushel—the market price at this time.

PEAS.

Those who are fortunate enough to have a few bushels of peas for seed, would do well to sow them now, broadcast, on their corn land, covering them as they give the last plowing to the corn. The vines will shade the land, act as a mulch to the corn roots, and will produce an abundant crop of peas.

VOL. 1.—19.

COTTON.

Notwithstanding the backward spring and the late planting, cotton has attained a good size. It is not as tender nor does it require as delicate attention as during the first month of its growth, but it still demands careful watching, a soft, friable, and perfectly clean bed, and undisputed possession of all the nutriment which the soil affords. The crop should be thinned to a stand as soon as possible. David Dickson, in his book on agriculture, directs that two or three stalks should be left in each hill, (the rows being four feet apart) at the distance of nine inches between the hills, adding that "when the cotton commences to bloom, each stalk will bloom and take on just as many bolls as if there were only three stalks to the yard. This system will insure eight stalks to the yard, if hoed with care, which is one hundred and sixty six per cent. more stalks than if one stalk is left for every twelve inches. By placing the stalks thick in the drill, and wide apart, the land is less shaded and gets more light and sun." The utmost care is necessary in thinning to a stand, so that the stalks which are left may not be bruised or injured. To guard against this, wherever it is required, the hand should be used instead of the hoe. It will take more time, but there will be no "sore shin." As soon as this work is complete let careful plowmen throw some fine soil to the plants. This plowing should be shallow, not exceeding half an inch in depth; but, in splitting the middles, the plow may be run deeply with advantage. It is the almost universal practice to apply the commercial manures for cotton, in the bottom of the row before the bed is thrown up, and the seed is planted. We believe that if half, or two thirds of the quantity were applied then, and the other half, or third were applied when the crop is sided the second time, the benefit to the crop would amply repay

the additional labor. We have seen the experiment made upon a small scale, and can vouch for its success.

The objection to this is that planters have not time to do the work—that it is as much as they can do to get round their crop in the old way. To this objection, we answer, that if the application of manure in this way and at this time, will pay, we ought to make time to perform it, and plant only as many acres as we can cultivate to the best advantage. We wish some of our readers would try the experiment this year, and let us know in the fall, whether or not, they have derived benefit from it. See to it that you work your cotton at least once every three weeks until you lay it by, and if your land has been properly prepared, liberally enriched, carefully planted, and adequately cultivated, you will find that before the end of the first week in August you can "lay by" with safety. Dickson says: "It is essential that each of the ploughings should be done very shallow and close, *never stopping for dry weather*. If the ground stays too wet you may stop a few hours and hoe."

WHEAT.

During the early part of this month the wheat harvest will demand attention. The grain intended for seed should be allowed to mature fully—become "dead ripe," before it is cut, but that which is intended to make flour should be cut sooner, while it is partially in the dough.

As soon as the "shocks" are dry enough, the sooner the wheat is threshed the better. When threshed and cleaned, let the grain be carefully sunned for several days, until it is thoroughly dry, and then put away in the middle of the day, in tight bins or barrels.

OATS.

The harvesting of the oat crop is also a very important item in the work of this month. Never was a good yield of oats more desirable than now, and never was it of greater value, when corn is \$1.75 per bushel, and hay \$2.15 per cwt. The cutting should begin with that portion of the crop which is intended to be used for forage, and should be done when the grain is in the dough state. That intended for seed should be allowed to mature fully. Care should be taken to cure the oats thoroughly before they are stacked or housed, and they should never be put up in any large bulk, unless they are perfectly dry. If put up too green or damp they spoil easily, and become worthless. Tie in small bundles, and make small shocks, so that they can get all the sun and air, to dry them, and when dry haul them to the barn. Do

not stack them in the field. Stacks are rarely made rain-proof, and never proof against a class of depredators who are now roaming through the country, seeking what they may appropriate to feed the wretched animals with which they are trying feebly "to make a crop to the'rselves." The oats secured in the barn, the barn secured by a good lock, and the key in your pocket, is the best and most improved mode of "saving" the oat crop.

SWEET POTATOES.

Still continue to plant sweet potato slips on every spare spot of good ground. During all this month they can be planted with advantage. (See directions in FARM AND HOME, for April.)

FORAGE.

If you have any doubt as to the sufficiency of your provision for forage, for the coming fall and winter, keep on planting Egyptian millet corn in the drill, or Chinese sugar cane. They will pay well, and if your land is not rich, buy fertilizers and apply them as liberally as you would to cotton. Remember \$2.15 per cwt. for Northern hay, and then sending to the depot to haul it home.

TURNIPS.

Prepare now for a large crop of turnips, by plowing the patch frequently until the soil has become perfectly pulverized. Next month will be the time to sow your seed for *ruta bagas*. Be sure to get good seed, and to do this, buy only from a seedsman of established reputation. In the absence of good stable manure plowed under in February, dissolved bones slightly ammoniated with Peruvian guano, and applied at the rate of 800 to 850 lbs. per acre, we have found to be an excellent manure for turnips.

Protection of Planters Against Cotton Rings and Speculators.

BY REV. HENRY QUIGG, COVINGTON, GA.

[CONCLUDED.]

The second and supplemental part of the whole plan I now proceed to present. Present relief was the inspiration of what I have written. Our future and permanent prosperity shall not constitute my theme. Our grand desire is and should be independence. If then we would not remain forever in swaddling bands every farmer must produce all available supplies for home consumption. Want of the prime necessities of life will still leave us a poor and dependent people. Our Cotton receipts will not enrich us, but the grain growers of the West. What comes in through one channel will pass out through another. We must secure and strengthen our

selves on every side. However strong the fortification may be in one place, its weakest point is but the measure of its strength. And however nobly manned and abundantly supplied with munitions of war, if only bread or water be wanting the siege will end in unconditional surrender. The world is besieging us for our cotton, let us fill our storehouses with the staff of life and we can dictate terms to the speculators and capitalists of the world for all future time. They will, and must have our fleecy staple. A long series of experiments made on the fairest spots of earth, have but resulted in the pleasing disclosure that as a cotton growing country our beloved and Sunny South stands unrivalled. The staple of other lands is almost worthless except for woof. It is ours which imparts value to the whole. Planters therefore, if properly fortified, can command their own prices. They occupy high vantage ground if they have only wisdom to use it skillfully. We hold then, that an abundance of the necessities of life produced on their own soil is indispensable to the prosperity and independence of any country. Cheap food is necessary to population, and population is necessary to power, wealth, and independence. And who ever saw food cheap and plentiful when imported from abroad. In rigid accord with this natural law all the distinguished nations of antiquity were founded and nurtured amid the rich fruits of a fertile soil. This fact explains the rise and progress of every ancient civilization—instance: Persia, India, China, Mexico, Central America, and Peru. High up above the surrounding gloom, you behold a nation, powerful in wealth and arms, distinguished for learning, art, and science, rising on the corn producing banks of the Nile. Not only do we find cheap food essential to a nation's existence and greatness, but also, that the most fertile districts of every ancient nation show to day, the remains of the most distinguished wealth and skill.

Said is the most fertile spot of Egypt, and there precisely do we find, still grand in their ruins, Thebes, Carnac, and Luxor. If then we would pursue the path of safety and success, guided by the light of past experience, every planter will bend his energies to raise all available necessary home supplies.

At this point I am surrounded with a flood of high sounding opposition. Our lands, it is said, are not suited to the production of corn and small grain—better, therefore, in accordance with the rules of political economy, direct our energies to that department of labor which will

yield the most ample reward—plant cotton and buy corn. Let every State and nation cultivate that product, which, because it is best suited to its climate and soil, commands the heaviest profits per acre. This, like other general rules, is good within its proper limits—transcending its legitimate bounds it becomes destructive. The rule is correct when applied to products for exportation. If, for instance, I can raise cotton and coffee at equal expense in Georgia, but find that an acre of the former is worth two of the latter in the market, true policy would dictate planting all, or nearly all, the arable lands in cotton, whether I cultivate any coffee at all may be a matter of supreme indifference, as a few pounds per annum will supply the wants of my family, and these few can be purchased cheaper than raised; and should the beverage, from any national commotion, be shut out of our markets no serious injury will be sustained. But it is destructive when applied to articles of prime necessity. Let us take our illustration from the island of Cuba. Because in that highly favored clime, one acre of coffee is worth two of corn, shall the culture of the latter therefore be abandoned? Shall they make themselves the easy prey of any nation which can blockade their ports? And although in the normal condition of affairs, one acre of coffee may be worth two of corn, let the culture of corn substantially cease in the island and the heavy demand by a well known commercial law enhancing the price would perchance invert their respective value. But to still further intensify the thought, suppose the coffee on the island should fail and the corn be blasted on the Continent, famine will stalk the land, and after having expended their last coin the Cubans will perish by the thousands. To indicate results is sufficient. Such policy would prove suicidal. In like manner let the culture of corn be neglected among us and let us depend upon the West for supplies, the enhanced price of these products rising with the increased demand will more than restore the equilibrium betwixt the culture of cotton and corn. Or let the corn fail in Tennessee and Kentucky, and the whole proceeds of our cotton crop is swept away. Or should the cotton crops fail and the corn be blasted, or war shut up the factories of the world, what pen could depict the horrors of the Cotton States. Is not then, the above named political maxim both deceptive and destructive, when applied to the absolute necessities of life. Better, surely, at every apparent sacrifice, to make sure work for the staff of life. But, in reply to this array of un-

answerable facts, the planter may still say I will plant cotton and take the chances. Well, let me say again, this is, at best, a poor chance. For every cent paid out for Western corn under this system, is so much taken out of the planter's pocket for the benefit of the cotton-consuming world.

The whole cost of these absolute necessities is but a useless draft from the profits of his cotton. We can, in other words, by acting in harmony with one another, raise all our available home supplies and still command as much for our cotton crop as if we should plant more and travel abroad to purchase our corn. And this upon the plain principles of supply and demand. And then let it be borne in mind that this is a corn as well as a cotton producing country. Deep ploughing and proper culture have produced good corn on the ridges of Georgia this year, in the face of such a protracted drought. This being so, surely planters may be encouraged. Besides, there are thousands of acres of swamp land, not well adapted to cotton, which should be at once reclaimed and placed under cultivation. By pursuing this policy which nature and reason points out, our granaries will be filled with a rich abundance of wholesome grain, instead of being forced to accept an inferior article from abroad with all its fatal consequences. We hold that wherever man's lot is cast, self preservation, the first law of nature, claims the exercise of his energies in raising the necessary supplies of life. To neglect this duty is to violate natural law, and as we are born, live and act under the operation of law, and as the violation of all law, whether physical or moral, entails its appropriate penalty, and obedience to law ensures its own reward, we are prepared in accordance with these inexorable principles to find that those are the most successful planters who raise their home supplies, their land is usually found in a higher state of cultivation, wrought out by rotation of crops, they are independent of the outside world, their profits are clear gain, their stock is in good condition, and few losses are sustained from death by eating unwholesome food. While on the other hand, we find that the planter who depends upon the outside world for his domestic supplies is wearing out his land by a repetition of the same exhausting crop, consuming its vital forces and depreciating its market value, thus piecemeal killing the goose which lays the golden egg. His poor stock, because ill fed, are made still poorer by hauling poor corn from a distance over bad roads, and as a legitimate

sequel, they are found dying on every side. South Western Georgia in particular, where this system of transgression is working out its predestined results, has lost tens of thousands of dollars in mules and horses by feeding on damaged corn. Our aim, thus far, from a variety of considerations, has been to show that it is the interest and duty of Georgia to raise the necessary supplies for home consumption. Our attention has specially been directed to maize as the most common food, used hitherto in this country for man and beast, and we hope it has been made clear that it is our duty to raise even corn, if that be regarded as the staple food of the people, and just because it is so, though corn compared with cotton in value, acre per acre, will kick the beam. If then, the proposition has been demonstrated that it is our duty and interest to raise corn if it were the only article of food producible in the cotton States, much more should we engage with zeal and alacrity in raising other food for man and beast, equal, if not superior in value to the fleet staple, acre per acre. Should this be practicable, even the skeptical to the foregoing proposition, will be left without excuse in failing to fill his barns and granaries with a rich abundance of home produce. And that it is so, shall immediately appear. 100 bushels of Irish potatoes or 250 to 400 bushels of sweet potatoes or from 400 to 800 bushels of turnips, is only a average yield on good ground of any of these esculents, per acre. These figures are reached from year to year by reliable men in my own vicinity, and for the truth of my statement, I refer to any member of the Livingston agricultural Club. Now, these products will supply the place of corn in making pork, beef, mutton, butter, cheese; and consequently these commodities can be produced as cheap on our own premises as from any point at which they may be obtained. So that with proper management there is no incentive to enrich other sections purchasing abroad. Hay can also be raised profitably on every farm in Middle Georgia. This statement requires no proof. As an item of information, I may, however, observe that Mr. Camp, of this county, sowed five acres of useless swamp land in clover last September, and has reaped therefrom this season 18 tons of hay which, at forty dollars per ton, is worth seven hundred and twenty dollars. He also planted ten acres of cotton with three hundred pounds of fertilizers to the acre, and made 4 bales which at twenty-five cents per pound would bring five hundred dollars. The cost of p

daction in each case being deducted, the result will show one acre in clover, in this case, to be worth about two in cotton. Are not men too often blind to their real interests. But it may be said, none of these things will supply the place of corn for working stock. No, but we have a substitute at hand. Let oats be added to the previous list as the principal article of food for draught animals, and our corn crops may be diminished at pleasure. Oats and corn are now nearly of equal value in the market, and a bushel of the one has been proven to be equal to a bushel of the other in nutritious and strengthening qualities. Give working animals cleaned oats and it is certain that for all the purposes of health, strength and activity, they require no other species of corn. In Great Britain and Ireland may be seen some of the finest specimens of the equine race, and yet these animals have never tasted maize. Oats is their staple food. I speak that which I do know, and testify to that which I have seen. In the light of these facts, how fortunate is it for the South that oats sown in August is not only the surest, but the most profitable grain crop which can be planted. Let them be sown among the cotton at its last plowing, and their culture will entail almost no expense. Plow the cotton in the usual way, half an inch deep with the Dixon sweep. In this way, from 50 to 150 bushels are raised per acre. Esq. Davidson, my neighbor, raised 50 this year, Mr. Peabody reports 100, and others 150. Such an acre of oats is equal in value to the best acre of cotton, and being planted at the time indicated is subjected neither to rust nor drought in spring. Under this plan, raising food for cattle need not lessen the cotton crop a single pound. It will economize labor and revolutionize the whole system of Agriculture in the Southern States. The hands heretofore engaged in raising corn may be transferred to the cotton field. With our present scarcity of labor, this fact should arrest our most serious attention. While by the policy of alternation between cotton and oats the land will reach a higher state of fertility, and its market value will be enhanced.

Thus have we sketched our whole idea. Let the two schemes—complemental of each other—be heartily embraced, and fully adopted, and our present monetary wants shall be abundantly supplied; by the blessing of Heaven our land will be filled with plenty, the natural and artificial products of foreign lands will be laid at our feet, emigrants will flock to our shores, the profits of our great staple will be saved for do-

mestic improvements, and the South shall be rendered independent for all time, not only of "cotton rings," but of the world.

Round the World.

A short time ago we received among our mail matter, a long strip of paper, about a yard long, purporting to be a succession of tickets from New York round the world, which at first looked like a "complimentary pass" to Omaha, San Francisco, Yokohama, Hong Kong, Calcutta, Bombay, Cairo, Alexandria, Marseilles, Havre, and New York. A closer inspection revealed the words, printed across the face of the ticket, "good for one lesson in geography, but not good for passage." As we could not therefore visit the scene of George Francis Train's most brilliant exploits,—Omaha—nor eat spring strawberries in California, one of which is said to be enough to satisfy the greatest strawberry glutton; as we cannot pay our respects to the Mikado, the Tycoon, or even a Daimio; as we are cut off from our visit to the brother of the Sun, and cannot indulge in a tiger hunt in British India, as we are not allowed to climb the Pyramids or search for the sources of the Nile in Egypt, walk again on the Canebiere of Marseilles, or wonder at the evidences of Hausmann's architectural genius in Paris, unless we give James Fisk, Jr., and the Erie R. R. Co. a certain number of legal tenders, we abandon the trip and take the lesson in geography, which we take pleasure in imparting to others, showing how a trip round the globe can be made, and how much time it takes to make it.

Taking New York as the starting point, the tourist proceeds:

To Buffalo or Cleveland, 423 or 625 miles by the Erie, in seventeen or twenty-four hours.

Thence to Chicago, 588 or 855 miles, in twenty-one or fourteen hours.

Thence to Omaha, 490 miles, in twenty-three hours.

Thence to San Francisco, 1,950 miles, in ninety-three hours.

Thence to Yokohama, 4,714 miles, in twenty-one days.

Thence to Hong Kong, 1,670 miles, in six days.

Thence to Calcutta, 8,500 miles, in fourteen days.

Thence to Bombay, 1,219 miles, in two days.

Thence to Cairo, 8,600 miles in twelve days.

Thence to Alexandria, 100 miles in five hours.

Thence to Marseilles, 1,800 miles, in six days.

Thence to Havre, via Paris and Rouen, 576 miles, in thirty hours.

Thence to New York—home again—8,150 miles, in nine days.

Thus the "round trip" will consist of 28,799

miles of continuous travel by land and sea, and it will take almost 28 days to complete it, provided all the connections are made.

For the Southern Farm and Home.

Fish Ponds—No. III.

BY MAJOR JOHN G. BARNWELL.

The lost islands by the sea, once the home of accomplished and educated sportsmen, whose equipments for the field, the forests and the waters, were as various as the seasons and the game, have been revolutionized into the practical elements of the higher civilization in a semi-decade, by the upheaval of the lower strata of the population, destroying stalls, kennels, yachts, mansions, and all. There, the hunter no longer neighs at the baying of the hound—the bark is stranded, a useless hulk upon a lonely shore—the reels of Conroy and his rods, have passed away in the knapsacks of the plundering forager—the very forests and broad waters have lapsed into barbarism. This march of the higher civilization in its destroying tramp, swept from the board the venison, the mallard and the teal, the trout, the turtle, the bass, the muscle, the muscadell, the madeira and the *gout*, dropping the sportsman into the practical “hog and hominy” of Radicalism, to “root pig or die.” But, our minds are unconquered domains, freed by the blasts of adversity from the errors of prosperity, are masters of ourselves if not of lands—“if without hopes to rise, without fears of fall,” and see in all, not the hand of Destiny, but the guardian arm of the living God, and believing that all things are ordered for His glory, bow in humility and resignation to the transition—yet, in the weakness of human nature, we are not without deep regret at the loss of the comparatively simple joys of the sportsman’s life, with hound and horn, reel and rod, and the spray driving bark. Rods, hooks, and lines of the Conroy pattern, are of the past, and we deal practically, after the dollar and cent fashion of the times, in various methods and various snares for populating ponds with ichthyological species of the genus *salmo*, *percadia*, conger, etc. Now, tastes, elegancies, luxuries, are by-gones—a practical value of costs and profits is put upon every thing from the cradle to the coffin, and the fish pond must be weighed and valued by the same balance and appraisements. Heretofore we have had no reliable data to direct an estimate, to compare results with other investments of capital—the inquiry is new, and in consequence cannot be free from error. Our object then, is not to determine—no *ipse dixit*, only a

reconnoissance, leaving it for more practical men to be accurate.

The experiments in artificial breeding of fish in Europe and the Northern States of the *Confederacy* are due to the increase of population and the decrease of the fisheries. Nothing in it new as a question in natural history, but wholly new as a profitable investment of capital. We have no distinct idea of the results we propose to work out, are therefore unprejudiced, honestly hunting for the truth as yet buried in earthen works or submerged in water, to be dug out or fished out by mathematical formulas—hence, there can be no intentional deception to advance a hobbyism.

In the beginning of the investigation, we repeat the rule given in our last article, viz: *the area of the pond should be to the number of fish contained in inverse ratio to the volume of the supply brook*. We do not believe that any pond can be made profitable for market supply, except those that are fed by brooks or springs of the required volume and a known discharge, which is a more important consideration for fish culture, than the quantity, quality, and character of manures in horticulture. So far as the profits are concerned, it appears to be a *sine qua non*. In proof, we submit the following: In our last article it was shown on the authority of the Agricultural Report for the year 1868, that a pond 75 by 18 by 5 feet, of 4875 cubic feet, supplied by a brook in pouring eighty barrels of water per second, supported nearly six lbs. of fish to every foot, or 9000 fish to 4875 cubic feet. Let us now take the area of a quarter of an acre, 210 feet by 52.5, with an average depth of four feet, will give 44,100 cubic feet, which, if supplied by a brook of 784 barrels per second, will also support nearly six lbs. of fish to the foot, or the enormous number of 88,200 fish of nearly three pounds each, and would be worth in market over twenty six thousand dollars per annum. But, let the quarter of an acre pond be fed by a brook of eighty barrels per second, then the water would be changed in about two minutes, reducing the support to one and one fifth of a pound of fish per foot, or from 88,200 fish to 17,640 fish of three pounds each, and from twenty six thousand dollars to five thousand two hundred and ninety two dollars per annum.

This is a clear demonstration from practical data, that the gold, the profits, is in the brook, and that an estimate for a profitable pond cannot be furnished, until the volume of the brook is determined. At the same time a great deal more is to be determined by experiment, as one does

in horticulture, and we repeat that this article is but a reconnaissance of the subject. For instance: the size of the fish has some reference or proportion to the supply of water. Mr. Ainsworth, "the pioneer of fish culture in this country" says, "From experience, I am satisfied that one inch of water (by which we suppose he means the volume of supply spring) from forty eight to fifty two degrees" (temperature) "with proper care and fixtures, will hatch a hundred thousand trout, and grow in good health sixty thousand one year," when they will average two and a half inches long. (An inch of water, with a fall of a foot per second would change a cubic foot of water is two minutes and twenty four seconds; and the time to change all the water would be as the cube of the excavation.) This data is uncertain, however, as it is a conjecture. We give positive data from the same report, 1868, page 384. Mr. Seth Green's "pond forty feet square, had twenty thousand trout weighing from one to two pounds each." As this gentleman is also the proprietor of the nine thousand trout pond, we suppose the depth is the same in each, five feet. This pond is also fed by the same brook, of eighty barrels per second, and its cube of water is eight thousand feet, holding thirty thousand pounds of fish, worth three thousand dollars per annum. "The profits of trout propagation, under favorable circumstances, may be seen in the reported net results of this enterprise; one thousand dollars in 1865; five thousand dollars in 1867; and ten thousand dollars in 1868." These two ponds are 1825 feet area, or one twenty fourth, one sixth and a fraction of an acre, holding 29,000 fish, or 57,000 pounds, worth 5700 dollars; then, an acre of water so stocked would hold over seven hundred thousand fish, or over one million three hundred and seventy seven thousand pounds, worth per annum (supposing the supply constantly kept up by artificial propagation) at ten cents per pound, one hundred and thirty seven thousand seven hundred and fifty dollars per annum. Now, if there is an acre of land devoted to horticulture any where between Labrador and the Horn equal to that production, we would, if it were not for the temptations belonging to wealth, like to own it. We said before, that we had no idea of the results we were likely to work out, and are as much surprised as the reader. There is no mistake in the data—we think there is no error in the calculation—the only doubt is, whether a *southern* man could produce that sum by fishculture—but, *omnia vincit labor*! Mr. Green modestly

says, "every acre of water is worth two acres of land, if properly farmed. Most persons suppose that it can be done at a trifling expense. It can be done cheap, but it cannot be done for nothing. Spend one thousandth part of the sum spent in tilling the land, in cultivating the water, and fish may be sold in our market at two cents the pound."

Per contra: Time out of mind, before the days of Vauban of pentagonal forts, a soldier was required to excavate eleven cubic yards per day, with one cast of the spade, and answer at roll calls, attend dress parade, and cook his meals. If it required two casts of the spade to pitch the earth upon the lines, then two soldiers excavated eleven cubic yards, and for every additional cast, a man is added—hence, the narrower the pond the cheaper the work. Having no experience with free labor out of the ranks, and being governed by hearsay as to the value of Congo's day's work, we will, to be safe, rate him at half a man—eleven cubic yards per day at seventy five cents per excavation, doubling the cast per cube for embankments. This completes the data for an estimate. Having shown the profits of fish-culture by extracts from the Agricultural Report of 1868—given the rule for volume of brook—the rule of inverse ratio of area and depth of pond to volume of supply brook—and the probable cost of excavation and embankment—it will be found sufficient to direct one how to estimate his own engineering: and now, Mr. Editor, if you do not object to a barrel of spray or so aboard, we will haul our main boom, belay the weather jib sheet and lay to for soundings and a new departure—on the varieties of fish for this geographical section, and, on the management of ponds.

In the researches we have made through a number of works on ichthyology we have found but four or five fishes for ponds in this State. In Europe the carp is generally considered the most profitable for breeding, although a coarse and indifferent fish in flavor, besides that he does not come to maturity or spawning time before the eighth year, but he is a large feeder and of rapid growth. Any fish having the two last qualities would be best, provided of good flavor, since it is as easy to produce good as indifferent fish. So far we have only found the following, viz: Trout (so called,) Rock, Perch, Bream, Sucker (Buffalo?), Cat, Eel, and the smaller varieties or minnows. The Eel, though last, yet if cooked by the receipt of old Isaac Walton, is not to be surpassed by any.

The Trout, *Salmo fario* of Linnaeus, is one

of the most beautiful in form and color, among the finest in flavor, and a game fish with sportsmen. In color he varies greatly in different waters and in different seasons, yet each variety may be reduced to the same species. One of the difficulties to the unscientific in the designation of fish is the variety of color in the same species. Various causes are assigned: one, "the difference of food in different waters—such as live upon fresh water shrimps and other crustacea, being the brightest; those which feed upon aquatic insects, next; and those living upon aquatic vegetables, duller of all." It is doubtful whether the *trout* lives upon aquatic vegetables, from the armature of his mouth. All that is positively known is, "that trout in ponds are dark colored—those living in clear running streams on sandy bottoms, bright—and those living in brackish water not only bright externally, but their flesh has more of the salmon color." "They are a voracious fish, and like the salmon, shift their water to spawn and make up to the head of rivers to deposit their roes." Their food changes with the seasons, and the waters into which they annually migrate—at one time aquatic insects, at another flies of all varieties that dip into or pass near the surface. At these the trout will make a clear bound out of water and seize his prey upon the wing—at other times his food is the small fry of his own species, as well as the minnow—which last, however, it is supposed, he will seize in preference to his own species, since this instinct appears to be a general law of nature. The pond in which he is kept should be well stocked with minnows to prevent his falling upon his own fry. A "Mr. Tonkin, of Cornwall, England, put some small river trout two and a half inches long into a newly made pond. He took some of them out the second year of twelve inches in length, the third year sixteen inches, and the fourth year, twenty five inches." The *brook* trout, when well and copiously fed, will increase in stew ponds to four or five pounds, but never attain the size of lake trout. Nothing is said as to the kind of food. We can only state that many years ago, we visited a small fish pond belonging to a Mr. Bulky, at Hartford, Connecticut, in which *pike* were kept in numbers. These fish appeared to be all of the same size, about fourteen inches long, and were fed wholly on bread crumbs and baked meal, which they devoured voraciously, and as these fish are the most daring of the scaly tribe, we see no reason why trout may not be treated in the same way. In England, boiled peas and beans are used, let

down into the water in troughs at particular points, to prevent the water becoming turbid, as would be the case, if the food was thrown broadcast. We, however, believe the best food for fish, are fish, their natural diet. In the Fauna of the State of New York, there are ten varieties of the species trout—a greater variety, we presume, than can be found in any other province in the world—because of her number of lakes, her rivers running North, South, East, and West—flowing outward from a common centre, as if she were sea girt. Of these varieties, the only one we have heard of in the State of Georgia is the brook or mountain trout—but whether it is the same as the brook trout of the Northern States is a matter of doubt, as the difference in waters as well as climate, will produce a different species. There is also the same uncertainty of the species found in the lagoons, swamps, and fresh water rivers in the coast longitude.

It appears that both in England and America, large trout are rarely, if ever found in small streams—that, in two contiguous rivers, both of which empty into the sea without mingling of waters, the larger river will produce the largest trout. The smaller lakes do not produce as large trout as the larger lakes, yet in the smaller, there can be no want of water or of food. The question, whether a large ten or fifteen pound trout can be produced in breeding ponds is a matter to be determined by actual experiment, having given the only case we can find, that of Mr. Tonkin, England.

For the fish known as the *Rock*, we have been unable to find any generic term in any work on ichthyology. He is certainly not of the genus *Gobius* of *Linnaeus*, a rock fish of which there are many species, but all of the minnow tribe. The *goby*, is the only one we can find as a native of American waters, which are to be taken on the coast from New York to Savannah, in length from three to four inches. The fish called the rock of our fresh water rivers, is from six to thirty inches and over—misnamed, like hundreds of other fish, called by different names in contiguous provinces and districts. The rock is, we think, a species of bass, and to write unscientifically, a connecting link between the bass and the salmo tribe. A voracious game fish, not equal to the trout in flavor, but from our knowledge of him—so far as size is an object—the best for the fish pond. Like other running fish, he is to be found in our rivers from their head waters to the ocean, which he probably enters at times, but whether he is ever

like the trout, a brook fish, is more than we can say. We have seen some twenty of these fish, from fourteen to twenty inches long, taken in an hour or two near the mouth of the Ogeechee river, Ga., at the flood gates of rice field canals, have heard of their being taken in the Oconee, at Athens, Ga., and in the Saluda river, S. C., in sight of the mountains. He is a larger, fiercer, and stronger fish than the trout of the same waters. As to his fecundity and spawning time, we are unfortunately as ignorant as of his species.

The *perch* is so common a variety, that it is needless to say much about him. The red belly perch is not worth water room, but we understand there is a kind called the silver perch in this neighborhood (Athens,) that is a fine fish. The *perch* is gregarious and voracious, and will attack his own and other species with the courage of the boldest of his genus. He is destructive to spawn, and should have a pond to himself. A perch of three pounds is a large size in England, but they have been taken as heavy as eight and nine pounds. The fecundity of so small a species is remarkable, the roe has been estimated to contain over twenty nine thousand ova. He is common to the waters of both hemispheres, like the trout and eel, and like these, there are probably many varieties. In the time of spawning, they seek water plants and grasses, to the leaves of which the ova adheres until hatched. We know of no experiments in this country in the artificial hatching of the ova.

Of the bream, sucker, cat, we have no information worth writing. There is in the Western States, a sucker, known as the buffalo, which is said to be a very good fish.

For the eel, we confess we have an especial penchant. This singular marine reptile, if we may so mistall him, has as yet puzzled the naturalist. The eel is supposed by some to be an hermaphrodite, if there is in the world such a monster. At all events, the organs of procreation have not been discovered, and the eel is as little comprehended in days of electricity and steam as it was by the Roman two thousand years ago. It is known that its fecundity is marvellous, whether self-producing or otherwise—also that the eel is good, two important points in its favor. The drawbacks are, that there is no method of artificial breeding for the reason assigned, and that being amphibious, there is no certainty of keeping him in your pond. The eel has been a favorite with gourmands for ages. They are now imported into England from this Continent by tons, although the British Isles

abound in this genus. Ireland is celebrated for its lake conger. Had St. Patrick included the eel in his anathema against reptiles, he would not have been canonized, but coming from the Continent, he knew that the Gaul, like the Roman, prized the eel as a dish fit for a king, which, (if we have not forgotten our historical lore), as Edward of England proved, by dying from a surfeit off these royal squirmers—and the same dish too, it is said, silenced in death the soft melodies of the nightingale of Twickenham. This does not prove the eel unwholesome, but savory! Eat too much of anything, and horse or man may die. At all events, if you should be so fortunate as to feast on eels dressed after the receipt of Old Isaac Walton, you will not be surprised that the Roman and the Gaul, an Edward, of England, and Pope the poet, surfeited upon eels. As the eel is destructive to the fry of other fish, he should be kept in a separate pond, if possible.

The economical and profitable working of fish ponds for a market supply, appears to depend upon the following arrangement and methods. There should be four distinct ponds, three of which should be of the same size, or as nearly so as practicable, each to contain the number of fish you propose to furnish for sale—if possible, the one above the other, that is, on a higher level, so that the water may be aerated by falling over dams separating them. The fourth, a smaller pond of about one half the area of the larger, which is the nursery pond for the fry, artificially hatched. The first year put up a light building of the dimensions required to cover the hatching troughs, which have a certain proportion to the area of the pond, determined from the data that "twelve hundred trout have been hatched in a horse trough." For more exact information, see the Agricultural Report for 1868. Next, build the dam, or cut the excavation for the nursery pond, and the work for the first year is completed. When the fry hatched are an inch long, or more, put them in the nursery pond, and feed on any offal, beat into shreds, small enough for a minnow to swallow. The feeding requires care and attention, but little labor.

The second year build your first large pond, into which allow the young fish to pass by removing the fish check. The third year construct the second large pond, and complete it in time to have the nursery pond vacated for the newly hatched fry. When ready, remove the fish check, and allow the fish in the first large pond

(which we will call No. 1,) to come into pond No. 2. Then remove the fish check between the fry pond and No. 1, and allow the fish in the nursery to fall into No. 1, putting the fry last hatched into the nursery. The fourth year build No. 3, and last. When the fry for the third year are hatched, let the fish in No. 2, into No. 3; those in No. 1, into No. 2; the young from the nursery into No. 1, and the last hatching into the nursery. Out of No. 3, you will have fish in the fourth year for market supply, the number proportioned to the volume of brook. Your profits now begin, and if the works are properly constructed, it may be considered permanent; an annual income with less cost for labor, per annum, than any other cultivation known, and if the location is within reach of a market, we believe it would be an admirable investment.

The impregnated spawn you can get in any quantity needed, from Dr. T. H. Slack, Bloomsbury, New Jersey, with directions for hatching. We see no reason why a Northern variety may not be acclimated. At least the experiment should be made. The black bass, from the lakes, have been brought to the Potomac in the water tender of a railway engine, and are taken in some number at the very point of the river in which they were thrown by a careful conductor. The drum and the sheep-head are taken on the coast from New York to Florida, at the same seasons of the year. Why may not the black bass, lake trout, and other fine varieties be introduced.

In conclusion: any river stocked with fish, will be resorted to by the grown individual to deposit its spawn, and probably at the very point where the fish itself was produced. It is supposed by some, that our rivers have been depopulated by the washing of plowed lands on their banks, producing turbid waters. It may have some effect, but, the real cause is from the dams thrown across for water power, creating falls, over which running fish cannot ascend. If a law could be passed, requiring mill owners to build fish ways, as is done at the North, our rivers would again be filled with shad, rook, and trout, and if every city in the State located on the banks of rivers would appropriate a certain amount to the propagation of the fry the waters of inland Georgia would again teem with fish, for which they were celebrated in the days of the Cherokee.

We have finished, Mr. Editor, and will be extremely gratified if this effort in behalf of fish ponds should lead to the result desired—the restocking of the waters of Georgia with the shad, the trout, and the rook.

Surface vs. Deep Manuring.

BY W. W. TURNER, OF HANCOCK CO.

Of course it is best for all the soil to be rich, and then every one of the numberless roots that a plant sends forth, can find nourishment in abundance. The great objection to putting a quantity of manure in a lump, consists in the fact that, then, the roots all have a tendency toward that particular spot, only a given number of them can operate there to advantage, and the rest perish, or, at best, find nothing to bring home to the parent stalk, except what could just as well be conveyed by a less number. Take any vegetable production—even of those generally called tap-root plants—turn a gently flowing stream of water upon it, so as to wash all the dirt away, and you will be astonished at the numerous emissaries it has sent out in quest of food.

The condition most favorable to vegetation is, where all these minute fibres can find, in whatever direction they may turn, the nourishment, which is essential to the best growth of the plant. If, in spreading out, in the manner most natural to them, they do not obtain what they seek, then they fail to perform their functions to the best advantage. They do not carry back to the stalk all the food it needs; they become dwarfed, to say the least of it, and it is only those which bring the desired sustenance that are really useful. In this fact, consists the well-grounded objection, that some people have, to manuring "in the hill."

Many farmers are entirely opposed to putting fertilizers deep in the ground, believing as they do, that surface manuring is the best. It results from a careless habit of observing and thinking. Manure applied to the top of the soil, generally, in the course of cultivation, becomes diffused in such a manner, that many of the roots can draw nourishment from it, whereas, that which is placed deep in the ground, is hardly ever reached by the shallow plowing in vogue here, during the working of the crops, consequently, it remains undisturbed, in bulk, with the results described in the beginning of this article. But other things must be taken into consideration. One of the essentials to the useful action of manure is moisture. It is only in a state of solution that plant food can be conveyed to the recipient. The nutriment for the vegetable is carried through innumerable minute pores—through channels so contracted that only a fluid can find its way along them. Of what avail, then, is the richest manure ever applied, so long as it remains in a perfectly dry state? How can

it reach its destination through canals that have never been known to pass any thing but liquids?

Here, then, is the argument in favor of putting manure deep in the ground. The surface of the soil first becomes dry. The top of our land earliest feels the effect of drought. The lower down the manure, the longer it remains moist, the longer it continues to give off portions in a liquid state, the longer it is able to send nourishment to the plant above ground, through the pores of the roots that delve down to seek it. This is the best reason with which I am acquainted, why we should put the manure where we have only a limited quantity, a good way below the surface. The cotton country, for which I am now writing, is a land subject to the most unexpected and long-continued dry weather. During such seasons, what good can we expect from manure, lying so near the surface that it becomes "as dry as a powder house?"

Millet.

Comparatively few farmers in the cotton States have ever cultivated millet, or indeed, any merely forage crop. The necessities of the present year and the bitter experience of a too great reliance on a cotton crop, have, we trust, directed their attention to this subject, and induced them to try to raise their own forage.

Of all the grasses, millet is the most prolific. It will grow in all sorts of soils and climates and may be sown at any time from April to July. To secure a large yield, however, the soil must be rich and well prepared. We copy from the Southern Cultivator for 1866, the following valuable instructions for the cultivation of this crop:

Plow the ground deeply and thoroughly. Harrow it until it is well pulverized and level. In lat. 36 deg. the best time to sow is from the 15th to the last of April, and from the 20th of June to the 10th of July. North or South of this latitude variations should be made to suit the climate. The grass requires 70 to 90 days to mature, and the object is to escape frost, and at the same time to sow when we ordinarily expect sufficient showers for the first three or four weeks of its growth, to give it a vigorous start. There seldom is a failure in this crop, provided the season is such to make it grow rapidly until it is five or six inches high. Sow three pecks to the acre, and drag a brush over it. It should be mown about the time the heads begin to show generally over the lot. It should be spread and partly cured in the sun. It may then be put in cocks five or six feet high. It will then soon become perfectly cured and ready for stacking and hauling to the barn. Where the soil is good and the season is favorable Millet makes more hay than any other grass, but it is

coarse and not considered quite as nutritious as Timothy or Herds grass. The cotton planters who have sandy soil, black prairie or alluvial bottoms, known as "buckshot lands" would perhaps more safely rely on Millet for hay than any other grass.

MANURE—NO. V.

The whole subject of collecting, manufacturing and concentrating manure has been urged with, at least, earnestness upon the attention of farmers in the four preceding articles. As stated in the last, a farmer ought not to depend entirely upon manure, either collected, manufactured, or purchased, for the improvement of his farm. At best, they are all auxiliary to the fundamental business of ameliorating the soil by the turning in vegetable matter. The great need of the older part of the Southern country is vegetable mould or humus. This cannot be supplied in sufficient quantity by hauling leaves or straw on the land, even if these articles were abundant and accessible. The supply must be raised on the ground where needed. A good Providence has so constituted the air which we breathe that it will not permit man to utterly destroy the land which he has been in the habit of treating so badly. The fertilizing gases which the improvidence and carelessness of man allow to escape, the air picks up and deals out to the land again, in the form of falling leaves, roots and stems of plants, besides the direct supply of ammonia dissolved by rain water and taken directly to the roots of growing crops. Wise men will take advantage of the beneficent provision and restore as much of the wasted fertility in nature's way as possible. To do this the most effectually he must select such plants as will supply the greatest amount of enriching vegetable mould, while returning remunerating crops.

For our Southern climate, the writer knows no two which so well supply this great need as rye and peas. The plan is this: Let every farmer make up his mind that he will not *over crop* himself. This has been the *bane* of Southern agriculture. Let him plant just so much corn, cotton, and potatoes, as he can cultivate in the very best style, and have at least one week in the month to devote to the carrying out of the plan proposed.

Suppose then, with his mind thus fully made up to work the plan, and that his force is sufficient to cultivate one hundred acres in hoed crops. Let him sow one hundred more in small grain, mostly rye. The most of this should be sowed early in the fall; even if the rye is sowed in the cotton fields before the picking has been

finished. As soon as the rye is ripe enough let it be cut, leaving as much stubble as possible, and sow immediately in speckled peas, (whimperwill).

These peas will mature a fair crop after small grain in an average year. As soon as the first peas are ripe turn in the fattening hogs. They will pick off peas without injury to the vines. Should the number of hogs be so large as to eat all the peas faster than they ripen, turn them out, and in a week there will be enough matured to warrant turning in again. Hogs are the only kind of stock which should be allowed to run on the fields.

As soon as the peas are all eaten off and the vines cease to grow, turn them under. If lime and ashes are accessible at a reasonable price it would add very much to the value of the manuring to sow upon the vines about five bushels per acre. It may be thought that where cotton is made this work cannot be done just when needed. But under the present system of labor, very few women and children work in the field. These can be generally hired to pick cotton at from fifty to seventy-five cents per hundred. Where this can be done the men had better be kept at plowing necessary to properly carrying out the plan essential to the certain improvement of the soil.

In this way, mules and horses can be kept employed, and thus better pay for the expense of feeding them, while the land will be put in the best possible condition for spring plowing.

It will be observed that the land by this method, will have received two coats of vegetable mould. One of rye, wheat, or oats stubble, and one of pea vines. Both are known to be valuable additions to land. The rye, wheat, and oats, will amply pay for the plowing, sowing, and reaping, necessary to make the crop. The peas fed off by hogs, will amply pay for the seed and plowing, and the droppings of the hogs scattered evenly over the land will be no inconsiderable advantage. This hundred acres will be in the best condition for the application of all the manure, either manufactured or bought, which it may be desirable to apply to the hoed crops. The hundred acres from which cultivated crops have been taken will be sowed in small grain, and the same course pursued; thus rotating between small grain and hoed crops, year by year. One hundred acres are here spoken of simply to make the plan easily understood. Any farmer cultivating any number of acres can carry out the system.

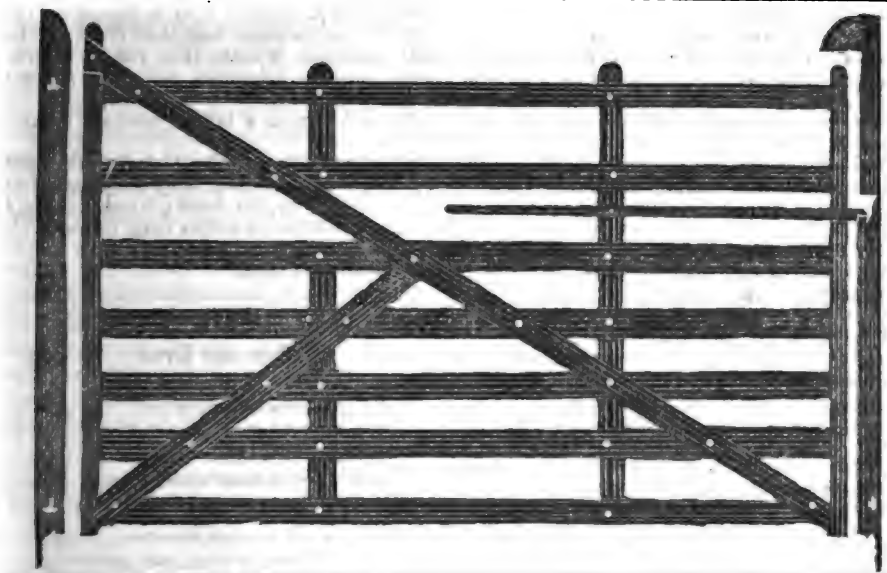
A little reflection will satisfy any one that this

plan *faithfully* executed, will fill the barns with small grain and abundant long forage for an increased number of stock, which will greatly increase the amount of excellent manure, as well as supply milk and butter in great profusion. Crops of all kinds will certainly increase under this system, and the farmer will grow steadily and surely rich, or at least, more and more comfortable.

Many speak of clover as the crop for improving land. The writer has no experience which will enable him to speak advisedly on this subject. All his attempts to raise clover as a field crop have been partial failures. Our native grass and weeds choke out the clover, unless the land is exceedingly rich and prepared with very great care.

All stalks, limbs and burs of cotton should be laid in large *deep* furrows, and thoroughly covered. Much vegetable matter can be accumulated in this way, while they are effectually put out of the way, instead of being burned, as some improperly do. *Nothing* should be burned which would make the soil mellow and friable, thus fitting it to better absorb and retain moisture, besides improving it by the addition of whatever fertilizing elements there may be in the substances buried. Experiments of this sort have met with *very* gratifying results. In 1866 the writer planted four acres of thin land in upper Georgia, after having bedded on all the cotton stalks of the crop of 1867, together with the corn stalks off six acres adjoining. The bedding was done immediately after the crop of cotton had been picked. He gathered from this land 1800 pounds of seed cotton (which ginned out 400 pounds of lint) to the acre. Some *little* barn yard manure was applied only to the *galled* places. Similar experiments made by himself, and by his father, fifty years ago, have all met with more or less success, as the work has been properly or improperly done, in the *right* time. This term "right time" is a very important one in farming. It saves immense deal of labor, and makes immense deal of difference in production. R.

CORNS.—Victims of tight shoes may derive comfort from Jessie Piesse: "The pain occasioned by corns may be greatly alleviated by the following preparation: Into a one ounce phial ask a druggist to put two drachms of muriatic acid and six drachms of rose water. With this mixture wet the corns night and morning for three days. Soak the feet every evening in warm water without soap. Put one third the acid into the water, and, with a little picking, the corn will be dissolved."



Farm Gates.

We copy from an old number of the *South Carolina Agriculturist* the following excellent article on the construction of farm gates, which we hope will induce many who now use "draw-bars" or, worse still, pull down a panel of worm fence to get into their fields, may be induced to adopt this durable, inexpensive, and in the long run, profitable improvement.

The above is a cut of what is generally known as Ward's Farm Gate, which, after forty years' experience, and close observation, I believe superior to any I have ever seen for the same cost. When their cost is contrasted with most fixtures of this kind, and their durability is considered, they will also be found the cheapest in use. They will last thirty years, and I have had several in use over twenty years.

After forty years' experience, and close observation, both in Europe and America, I believe them superior to any I have ever seen for the same cost. They will hold their own well, and last thirty years. I have some now over twenty years old, which look quite fresh and new.

The lumber should consist of a back piece 8 by 6, and 6 feet 3 in. long; head-piece 8 by 8, and 5 feet 3 inches long; bars 10 feet long, and, when dressed, 4 inches wide and 1 inch thick, if of pine; if of oak, they may be sawed that thickness. The bars should be morticed exactly square, and entirely through both back and head-piece, and not shouldered. The distance between the bars will be entirely safe against all stock, as follows:—Commencing at the lower bar between first and second, 8 inches; second and third, 3½ inches; third and fourth, 4 inches; fourth and fifth, 5 inches, fifth and sixth, 7 inches; sixth and seventh, or top bar, 10 inches.

The cross braces, and the two upright slats or palings, are all nailed to the bars, with the best

of wrought nails, with large heads, and they should be at least 8 inches long, and well clenched to the two palings, which are on the opposite side of the gate from the cross braces. These braces are of great importance; the long one is dove-tailed on the side, and near the top of the back-piece, passing to the lower bar and close to the foot of the head-piece; the short brace merely butts against the long brace on the fifth bar from the bottom, and against the back-piece on the bottom bar. All timber for gates should be strictly prime and thoroughly seasoned. Good draw-bars are better than a bad gate, or even one badly hung.

The hanging of a gate, which requires far more skill than making it, is rarely well done, even by good workmen. If timber is easily obtained, get the posts 10 by 12; if scarce, 8 by 10 will do, and 10 feet 6 inches long, and always put them in the ground *four feet deep*. If you desire to dig your post-holes with the least possible labor, commence them two feet wide and five feet long, so as to have plenty of room for the mattock, rammers, etc. Put in first, the post to which the gate is to hang, ram well when filling in from bottom to top, taking care to post it nearly plumb; let it lean slightly, say an inch or two, the way the gate is to shut, which is imperceptible to the eye, and settles back a little by the weight of the gate; but, should it remain so, it is not objectionable.

The hinges should be strong and heavy, full three feet long, well nailed on to the top bar and second bar from the bottom; a half inch bolt, square, close to the head, should pass through a square hole in the hinge, and through the back piece, as a nail is apt to give way at that point. A strip, about three inches wide, should be nailed on the top and lower bar, where the hinges are nailed, thick enough to make an even surface for the hinges to rest on from the back piece. The lower hinge should project about two inches further from the back piece than the

upper, and be curved outwards, so as to give the gate fall. The lower hook must correspond as shown in the plate, and must not be driven up as close by two inches, as the upper. The hooks should have strong square shanks, made to follow an inch auger, and the same thickness from end to end, not tapered like a wedge, as all store-hooks are. When boring for the hooks, slightly incline the point of the auger towards the centre of the post, and bore entirely through the post—for then, should a hook break, or be driven too far, it can be drove out or back with a bolt a size smaller than the hole.

Be careful that the gate, when hung, has about three-quarters of an inch between its back and the post. A gate that binds at this point soon breaks itself, or its hinges, never shuts well, and is a dangerous trap for children's fingers. The gate being hung, put up the head-post, and set it with great precision before any dirt is thrown in. It should be guttered 8 by 8 for the head to fall in, which renders it better in all respects, and is safer against stock. Like the back, it should have three-quarters of an inch play at the end, so it will not bind when shut.

I use a wooden latch, passing through a mortice in the head-piece, between fourth and fifth bars, and nailed to one of the palings, extending half its length back behind the paling. It is very convenient for opening; by its weight decreases the friction on the catch, and, of course, shuts easier. The catch and latch are very important, should be carefully made and put on, should work with as little friction as possible, so as to shut with certainty. No gate is perfect which will stand at any open point you may place it, even should the latch be touching the catch. The incline or slope of the catch should be of very gentle ascent, and the latch not too heavy. In getting the posts, prepare them to stand with their natural top end in the ground; leave no shoulder at the surface of the ground, it catches water, and causes them to decay the sooner—nor make any mortice for cross-pieces at that point. They will rot there soon enough without assistance; but put on a good thick coat of boiling tar, about two feet long, say a foot in, and the same above the earth.

Hang your gate about six inches above the level ground, then dig all up loose between the posts, and add two cart loads of earth that will set hard, and raise the ground to within two inches of the bottom bar. The gate will always pass over chunks or rocks clearer, and the little rise will prevent water from standing between the posts, which is very desirable.

As I have been minute, have had great experience and good practical success, I ask no one to shut my plantation gates after him, and I only ask not to prop them open. In fact after a trip of sixteen thousand miles in Europe and America, I saw no plantation or farm with a full set of gates entirely, as convenient and safe as my own. I saw a number decidedly more ornamental; but an ornamental field-gate I would not have as a gift—they are generally a nuisance anywhere. Paint with two coats of white lead before hanging, and one every three years afterwards, is good economy, and necessary to their durability. It is best to get lum-

ber enough at once for forty or fifty gates. Put it on the negro-house lofts, and it will soon be well seasoned; if more than you are likely to want, careless neighbors will gladly pay you double price for it.

The following is a bill of lumber for twelve gates:

Sixty bars 4½ inch wide, 1½ inch thick, and 20 feet long; six scantling 8 by 6 inches, and 12 feet 6 inches long, for back; 6 scantling 8 by 4 inches, and 10 feet 6 inches long, for heads. If the lumber should be oak, the bars may be sawed one inch thick.

For the Southern Farm and Home.

Unto the Even.

Tollers till the even-tide!
By all waters sowing wide!
Faint not for the summer's heat;
Halt not for the weary feet;
Forth! were labor's guerdon less
Than a crown of Righteousness.

Wist we of the seed we sow
How the tender blade shall grow?
How the tiny germ may hold
The harvest of a hundred fold?
Bud and blossom, how they swell,
Momentally a Miracle?

By our paths of pain and care
Still the lily blossoms fair,
And the sparrow finds her nest
In the Temple's sacred rest;
Witnessing with Him who saith
Be ye faithful unto death.

He who fixed the planet's place,
Clothes the lily with its grace;
He who marks the sparrow's fall
Hath his mercy for us all,
And his loving pity sees
That our life is more than these.

Wherefore by the water's side,
Toil we till the even-tide:
Trusting, while a flower may share
The bounty of his love and care;
Toiling, were our guerdon less
Than a crown of Righteousness.

F. O. T.

CALIFORNIA EVERGREEN OATS.—This cereal is being introduced in the Southern States, and will no doubt prove a valuable addition to Southern products. The *Aberdeen Examiner*, a paper published at Aberdeen, Mississippi, in speaking of these California Oats which are now growing in the vicinity of Aberdeen, says they grow to the height of three or four feet, and are green all the year round, and, in addition to these qualities, possesses the peculiarity of always having a crop coming on; that is when the first is three feet high, there is a second growth two feet in height, and a third about one foot above the ground.

[Before we accept as indisputable, all of the

above statements, in the frequently employed language of "a recent exchange," we wish some of our subscribers "would give us further information" in regard to these marvellous oats.]

From Tinsley's (London) Magazine.

FALCONET.

(CONTINUED FROM MAY NUMBER.)

I do not think I ever saw a more beautiful girl than Eva, or one that impressed me with a stronger sense of life and power. She was a girl who, without being large or stout, dwarfed and impoverished every one who came near her. She had improved since we last saw her. That was one of her peculiarities; she always seemed to have improved during an absence. Beautiful as she was to think of, she was always more beautiful in the reality than in memory; and whatever her dress, it was just that which most became her. She was lovely in colors; in her heavy mourning she was sublime. And yet, as with Lewis Falconer, there was something about her that spoiled all her beauty—something that one could not love, and that one could not help fearing. She had been in Italy for the last two months, and she seemed to have brought back some of the Italian sun on her peachy cheeks; and as she stood there, contrasting with Linda, so fair and colorless, she made her look faded and insipid. There is some kind of beauty that seems to poison every other; and Eva's was of this kind.

At the sound of the creaking door, Lewis looked around rather angrily. When he saw who it was, he dropped Linda's hand quite suddenly; no, he did not drop it—he flung it away, and a savage half-groan, half curse, burst from his lips. We were all scared, of course; but Eva, as if it was quite the most natural thing in the world, glided in gracefully and took her place by the side of the bride; and as she stood the sun came out for just one of those brief and almost fierce flashes one sometimes sees in a winter's day, and threw the colors of the painted window right over the wedding group. A line of purple red caught Linda's floating hair and crossed her breast; it touched her husband's hand as he stood with his right hand clasping the upper part of his left arm; and then it spread out into a broad stain at his feet—a very pool of blood-red color lying on the stone pavement.

I cannot tell what sick madness seized me, but it seemed to me I heard the same heavy footsteps that I had heard last night—slow and staggering, as if under a weight—and the same painful sigh accompanying it, with the drip, drip, as of water falling on the stones. I started and stared about me, but there was nothing; only the dark and dreary recesses of the chapel, the colored shadows of the window, and by the altar the small bridal group, with the purple pool made by the robe of some martyred saint dyeing the stones at Lewis Falconer's feet; only the pallid, white-robed bride, and the lovely face of Eva Fairlie in her heavy mourning, looking fixedly at her cousin.

Then the clouds gathered thick and heavy

again, and the bride and bridegroom knelt for the last prayer. When it was ended, Linda, whose face had been hidden in her hands as she crouched rather than knelt against the altar, was found to have fainted.

"Let Maria attend her," said Lewis, coldly. "Come, Eva"—and he offered his arm to his cousin—"come into the dining-room and tell me why you are in mourning, and how you came here to-day—to-day of all days in the year, and at such a moment," he added bitterly.

I could not help hearing all this as I followed them slowly out of the chapel. Mamma would not let me stay with Linda as I had wished, so that I was obliged to follow them, and I could not help hearing them. They did not seem, either, to care to talk so that no one should hear them; they did not seem to care for anything, indeed or to remember anything but each other.

"I came, because poor mamma is dead," said Eva, "and because she left me to your care, cousin Lewis."

"Left you to my care, Eva? Are you my own dear charge now?" asked Lewis, and I did not think he could have spoken with such tenderness.

"Yes," said Eva; "and I am so glad that I am, cousin Lewis, for I want to tell you how sorry I am for behaving so badly to you in the autumn, and I want to ask you to let us be friends again—I was going to say, to let us be as much friends as we were, but that is now impossible." She sighed as she spoke, and yet her eyes looked more hard than loving; and though her speech was apparently simple enough, and spoken in a pretty, coaxing accent, I felt that it was meant to torture, not to soothe—that it was the mere tantalising of a coquette—not the honesty of a lover.

"Eva!" groaned Lewis, "why have you come to torture me? It is too late! My God! it is too late! and you have come to wring me with agony."

"What is too late, dear Lewis?" she answered. "It is never too late to do well. Quarreling and dislike are such unchristian states to be in, and I want to be at peace with you both; with you because you are my dear, dear cousin, and with your wife"—she emphasized the word so that I saw Lewis blench as if she had struck him—"because she is your wife. We were not very good friends, I think, in old times, and I remember I used to think her heavy and impassive; but as your wife, dear Lewis—that makes all the difference, does it not? You must have found out something good in her—something very good—to have made you forget poor little me so soon."

The look of hatred and ferocious despair that came over Lewis Falconer's face made me shiver.

"My wife!—found such good in her as to make me forget you! Eva, I think no tigress was ever crueller than you!" he groaned.

"Cruel, dear Lewis! Why? Why should I not call Linda your wife? Have I not just seen you married, with the opal necklace, too,"—and she laughed—"the very opal necklace you promised me? Are you afraid of words and not of things, Lewis?" she added, suddenly, taking

a quite different manner. "Do you dare do a thing and then shrink from speaking of it? Now, you see, I am not ashamed of putting words to my deeds. For instance, I am not ashamed to confess that I came here sorry for my misdeeds, and anxious to put things back to their old place; to ask you to let them go back; and I find you married! I came wanting to marry you, and you are another woman's husband. That is terrible you know, if you were to put it in plain language; but you won't. You would be afraid of labeling your actions as plainly as I dare do; but that is just the difference between us, and it always was just the difference between us. You do and dare not label; and I do and label. Now you must go and look after your wife. I have told you all I wanted you to know; but, as you are married, you must leave me and go and attend to Linda."

Just then mamma called me and I heard no more.

When the time for parting with poor Linda came, I do not think I ever went through such pain. What papa and mamma felt, I do not know; but I felt that I was leaving Linda to her death. Linda, herself, too, looked so scared, so pale and terrified, so unlike her usual placid, indolent self, that it made one's heart ache to see her. She clung to us with a passionate abandonment that made me cry, and mamma and I saw even papa's lips quiver. Lewis and Eva stood looking on—so handsome and yet so hateful as they both were! How cruel they looked—like two beautiful devils! The last we saw of them all was the pale, weeping bride standing apart in the bay window, watching us as we drove away, while the two cousins were in a farther window, arm-in-arm, talking together and laughing.

"I am so sorry we ever countenanced that marriage," said papa, as soon as we had got into the carriage, speaking to mamma; "no good will come of it."

"I am afraid that Mr. Falconer does not love the dear girl as she deserves," said mamma; "but perhaps her good qualities will win him over in time."

Mamma was one of those people who always will exaggerate the hopeful side of things. She was sometimes almost irritating—dear mamma, what a shame of me to say so!—but indeed she was, with her determination never to see faults or objections, but only the good that did not exist. Papa said no more, and the rest of the journey was passed in silence.

We heard nothing of Linda for a long while, and then she wrote in answer to at least half a dozen notes of mine, saying that she had been ill; that Eva was settled for good with them at Falconest, as she was an orphan now, like herself, and Mr. Falconer's ward (she did not call her husband by his Christian name yet); and that she was a great companion and amusement to Mr. Falconer, and made the time pass more pleasantly for him. What a strange thing for a wife to say! She spoke very lovingly of us all, and of her happy school life, and dwelt on every little fact in a way that of itself showed she had no very pleasant circumstances to occupy her in the present; for people never speak of the past

so much, if they are happy in the present. I was not asked to go over to Falconest, as she had always promised I should be; and she made no offer to come and see us. But a paragraph at the end of the letter struck me as explaining all:

"Mr. Falconer would send his remembrance. I am sure, if he knew that I was writing; but he does not like my writing letters, he says, as I have not told him of this."

"Ah, she should not deceive her husband," said my mother gravely, when she read the paragraph.

Deceive him! I think she was perfectly right to deceive! If those words did not mean that she was in utter slavery and thralldom, I wonder what else they meant! Deceive him indeed! I wish she had or could! This is always the way with people; they are so very earnest that their victim shall be so upright and honorable to the tyrant! For my own part, I wish that Linda had got help and protection from her husband by any means whatever, honest or dishonest, candid or secret! What did it signify? Did we set traps for vermin?

The night after I had Linda's letter I could not sleep. I did not know what was the matter with me, but the whole room seemed to be full of some nameless terror—some awful horror, and though I did not hear, I seemed to feel, to be conscious of—sobs, and cries, and shrieks far worse to bear than if one had heard them with the bodily sense. If I had dared, I would have got up and gone to mamma's room; but she had been very ill all the day, poor dear! and I did not like to disturb her for what was simply imagination and disordered nerves. But the horror drew nearer; the sobs and cries were thicker; it seemed to me that all manner of dreadful shapes and shadows flitted about; and at last I could bear it no longer. I felt I should have gone mad if I had staid longer as I was, so I started up, and, going to the window, pulled up the blind and looked out. I felt the need of looking at something real—at something that I could not mistake. The moon was shining cold and bright on the leafless trees and frosty ground; but there was something in the look of everything that frightened me even more than I was already frightened. It was all so ghastly, so white, so desolate! As I stood there I could have sworn that I saw things moving about the garden, while the trees and shrubs seemed to turn into horrid goblins, that tossed about their skeleton arms, and bowed to me and mocked at me.

Suddenly I heard a deep sigh behind me. There was no mistake this time—no mere fancy or trick of imagination. I turned round, and there, in the full moonlight, stood Linda Falconer. She was all in white, as I had seen her on the night before her marriage, with her long fair hair streaming over her shoulders, but dry and dripping with blood. She was ghastly pale, and neither moved nor spoke; only her eyes looked full into mine with a pathetic expression that went to my heart.

"Linda! my own Linda!" I said aloud, and the sound of my own voice startled me. It was not like my voice somehow; it was like a hoarse

loud shriek. It seemed to startle Linda too; for slowly, slowly, the form seemed to fade away, and only the moonlight poured coldly through the room. And then came the heavy man's step I had heard before, and a dusky shadow passed dimly across the moonlight, and with it a low sobbing and sighing, and the drip of something falling on the floor; and then all was dark, and I fell to the ground.

For some time after this I was very ill, in a high fever, and delirious; and this state lasted for many weeks. And after this came the long period of convalescence; for I mended but slowly, and so the winter had quite passed away and the spring had come when I recovered. I often asked news of Linda, but I had never got any direct answer, save that she was well. I could not find that any one had seen or heard of her, and I fancied that they put off my inquiries, and never answered me fully. When I got quite well, I heard all there was to know. Falconest was deserted; the family had suddenly left, and no one knew where they had gone. Their leaving had not been known in the neighborhood at all until some time had elapsed, and when it was known, there was no clue to be had as to Lewis Falconer's whereabouts.

I knew it all. It was of no use to reason with me, to try to pacify me, to put me off with arguments or excuses. My mind was set on one thing, and I was determined to find out the mystery of Falconest, if I went alone to the search. At last I prevailed on my father to go over with a couple of men, and to take me with them. When we got there we found only one old woman, deaf and partially crazed, who had but one idea—that of keeping out intruders, and resolutely refusing to open gate or door. But by some adroitness that I did not quite catch, one of the men slipped through an unguarded entrance, and soon we all stood in the gloomy, dark, deserted hall of this hateful house—this God-forgotten house indeed.

Scarcely knowing what I did, or what I expected to see, I dragged papa to Linda's room, the room in which we had sat that last fatal night. The tapestry was torn, a broken chair lay on the floor, the bell rope had been cut, and there were large rents in the curtains, as if some poor, frantic hands had clutched at them for a momentary stay. There had evidently been an awful struggle; for broken fragments of all sorts of things were strewed about; among others, one of Lewis Falconer's golden sleeve-links, and one of the opals of poor Linda's wedding necklace. And on the floor, where I picked these up, there was a deep, dark stain, as of dried red paint.

And from this stain went a narrow track of red all across the room to the door, upon which was the impress of a bloody hand that had opened it. We followed the stream, with every now and then the same mark of a bloody hand upon the wall, as if some one had steadied himself beneath a burden, until it brought us to the chapel, to where the sun shone through the crimson robe of the martyred saint, and threw down that broad, ominous stain before the altar. A large flagstone had evidently been lately moved.

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"She is there!" I whispered.

I remembered that they tried to get me away, but that I shrieked and clung to the altar rails. I felt bound to stay—bound to see it—to know and realize the worst. I saw the men slowly heave up the huge flagstone, and I stood stiffened and strained, watching for what was to come. No; I cannot say it out. I should go mad again if I were to say, in definite words, either what I looked for or what was found. But as they heaved up the stone, I saw, in one terrible glance, the outline of a figure crushed down below, a white robe, a mass of flaxen hair, and a dark red stain, crying out to Heaven for vengeance—as I cry out for vengeance now!

Rome:

(AFTER THE BATTLE OF ACTIUM.)

BY CHANCELLOR A. A. LIPSCOMB, D. D.

Dedicated to the Senior Class of the University of Georgia.

Rest, Eagle, rest
And on thy breast,
Fold close the pinions of thy soaring might,
And tame to peaceful strength thy fierce delight:
None dares thy threat'ning eye,
None can thy vengeance fly,
Since in thy glance, earth's nations live or die.

Far swept thy path
Of winged wrath,
When lightnings cleft thy passage thro' the clouds,
Which, pale beneath thee, dropt like winding shrouds
Around thy myriad dead;
Did Mars thy Rhea wed?
Nay; snaky furies twined about thy head.

O'er Alpine snows,
Whose stern repose
Had hushed the raging world to silent awe;
Thy shriek did wake the elements to war,
And loose the avalanche,
That didst old heroes blanch,
As though thy talons did Jove's thunders launch.

Gather thy dead,
Where'er they bled.
Pile up their dust in monumental fane,
Rome's seven hills shall blush and shrink in shame
To have far loftier mounds,
Than those her wall surrounds
Muffling her praise in sad sepulchral sounds.

Thy whispered name;
That was thy fame,
When neither Lybian heats, nor Rhetean cold
Could still the bated accents, as they told
How gods did arm thy might,
How gods did for thee fight,
Blasting thy foes, like a sirocco's blight.

Count up the slain,
Who cursed thy name;
A million men lay dead in Caesar's path,
Gaul's forests fattened on thy bloody wrath;
Each soul a haunting ghost
Whose curses drown thy boast
And taunt the grandeur of thy savage host.

Enough! thy life
Shall end its strife;
Lo! from afar returns the homeless dove,
And brings the budding olive branch of love
Which 'neath Augustus' hand
Its healing shades expand
Till Numa's grove shall rise to bless the land.

Close now the gates
Where Janus waits,
Black crimes have settled there with rust of years,
Such crimes as wrung from hearts, their saddest
tears.

Two centuries not closed!
Two centuries of woes!
Oh! gods, relent; of friends make no more foes.

Seal up Fame's roll,
Immortal scroll,
Whose grandeur kindled with thy vestal son,
And flushed their heights with empires Caesar won.
Afar, thy splendors burn,
Afar, the ages turn
To yield their homage to thy "acceptred urn."

Make ready now,
Bend low thy brow;
Thy stately poms shall pave Messiah's way;
Beneath His feet thy largest honors lay;
Thy oracles are dead,
Thy vestal virgins fled,
And o'er the world, His star's bright beams are
shed.

From the American Agriculturist.

The Advantages of Underdraining.

Ogden Farm finds encouragement in the following passage in the Hon. George Geddes' Essay on Wheat Culture. "Undrained clay lands are never worn out, for the owner that lacks the energy to free them from stagnant water, never has force enough to exhaust their fertility by cropping. Manure on such land is nearly thrown away. Draining is the first thing to be done; next, thorough cultivation, then manure. Whoever reverses this order throws away his money and his labor."

This would be a good text for every farmer to keep constantly in mind. The *profit* of farming comes entirely from the *surplus* of production beyond the grand total of the cost of interest, labor, seed, manure, and wear and tear.—These are nearly fixed quantities. They are at least as great, in the aggregate, with medium crops as with good ones. If 80 bushels of corn to the acre will barely return the outlay, 60 bushels may give a clear profit equal to the value of 80 bushels. There are thousands of farms in the country, whose soil contains enough of the elements of fertility to produce fair crops with the aid of ordinary manuring, (if only these elements were come-at-able,) but which, by reason of their soggy and unpleasant condition would do less injury to their owners if they were hopelessly barren. In the spring and early summer they are moist and cold; more like putty than like arable land;—in July and August they are baked to a crust; and when the fall rains come they revert again to their weeping state. Any effort to make good land of such a farm as this without draining, is simply an effort wasted. Neither labor nor manure can do much to drive away the demon of "bad-luck," by which every path of its owner is beset. I have scores of letters from the occupants of such farms,—and I have had for years. I began by advising this and that make-shift, where it was claimed that the expense of draining could not be borne, but I have finally learned to say, pointblank, to any man who is trying to make his way on this kind of a farm: "Either drain

it or give it up! You can make more money by working at day's work, on good land, than by fighting year in and year out, against the established laws of Nature. If you can't do better, sell off your stock,—and if necessary, work for a neighbor enough of the time to earn your bare living. Spend the rest of your time and all the money you can raise in draining the *best* field you have got. Don't imagine that your case is to be an exception, but accept the fact, now, that you *can't afford* to farm wet land—either own up that you are only fit for a day laborer, or buckle to and make your land worth cultivating."

There are two great obstacles to the advancement of underdraining, viz: One is, the idea that land which suffers from *drought* does not need draining, when the fact is that land often suffers from drought just *because* it needs draining.—take out the water and let in the air, so that the soil can be put in proper tilth, and it will be able to withstand drought. The other is, the not unnatural notion that the first land to be drained is that which is now the wettest. In my judgment the improvement should be first applied to those fields which are just dry enough to be considered arable, but which, two years out of three, disappoint the farmer's hopes and produce barely enough to repay the cost of cultivation. If such land as this is drained it will pay a profit. If a back swamp lot is drained it may be years before it will do more than pay the expenses of its management. Begin with the very best land that needs draining at all, and *make it produce a profit*, and then take the next best and bring that to a profitable state, and so on until the back swamp comes in its turn. What we want is not so much large crops as profitable crops. A hundred dollars' worth of corn that has *cost* a hundred dollars had better not have been grown. It don't pay to work over large areas for meagre produce. Pile on the steam!—Crowd the production to the most remunerative point!—and *then* extend your operations to the next best field and make that pay a round profit. This is the soundest principle of good farming, and in carrying it out we shall have no more efficient aid than is rendered by thorough draining on the best lands that need draining. When this is accepted as the correct principle, we shall see draining extending in all directions. So long as the chief effect of draining is to convert innocent waste lands into fields for unprofitable work, its progress will be but halting, and farmers will continue to cry out against its great cost.—Cost? Why, suppose it costs as much to drain an acre of land as to buy an adjoining acre. This is no argument against it. The one acre, *drained*, would pay a handsome profit—the two acres undrained would pay no profit at all, and had better be left to grow wood. What is wanted, as the foundation of the best improvement, is a conviction in the minds of the farming public that it is better to have good farms than to have large farms. That point being gained, all the rest will come as a matter of course. Let us confine ourselves to such areas as will give us the most money for our farming, and leave the rest of the land to take care of itself.

From the Plantation.

Letter from Mr. Kimball.

ATLANTA, GA., April 18, 1870.

Hon. B. C. Yancey, President Georgia State Agricultural Society :

Sir—My communication to you on the 7th instant, offering a special premium of \$500 for the best bale of cotton raised in the State of Georgia was written hastily, and without that mature reflection which the importance and general interest of the matter demands.

Simply offering a premium for the best bale of cotton, would, I am satisfied, debar a portion of the largest cotton growers in the State from participating in competition for said premium; and would not meet the object and ends which I desire to accomplish, viz: the advancement of the material growth and prosperity of the agricultural and mineral interests of the State.

It is to these interests that we must look to make Georgia "the empire State of the South," and a power in the nation.

If we would have influence, we must be prosperous. This is as true regarding a State or nation as of an individual—to be prosperous and successful, we must not only be industrious, but systematic and energetic.

I am of the opinion that by a proper use of proper fertilizing properties, and labor-saving machinery, that even the old and wornout acres of Georgia will again blossom, and yield to her people a richer harvest than ever before.

The great object to be attained in agricultural pursuits is to produce the greatest yield with the least amount of labor.

Your Society is capable of exerting a powerful and most wholesome influence throughout the whole State, towards the accomplishment of this object, by impressing the grand idea that it only requires energy and perseverance to prove the new system of labor vastly more remunerative than the old.

It was to assist the Society in the accomplishment of this object that I offered the premium referred to.

I therefore most respectfully request that my proposition be amended as follows:

I propose to place to your order, subject to the decision of the Committee, \$500, to be offered as a special premium for the largest and best yield of cotton (the quality and quantity to be considered in the award) which is raised during the present year on *five acres of land in the State of Georgia.*

And that North Georgia may be encouraged to exhibit what she can do for the advancement of these interests, I now propose to offer an additional premium, and place in your hands the further sum of \$500, to be offered as the following premiums, viz:

Two hundred dollars for the best five acres of wheat.

Two hundred dollars for the best five acres of grass.

One hundred dollars for the best collection of minerals collected from the soil of Georgia.

I would furthermore suggest for your consideration that you require competitors entering

for these premiums to pay a special fee of 50 per cent. of the premium proposed, and this sum to be devoted to the benefit of your Society. This question, however, I leave entirely to your own judgment.

When you are in the city, please do me the favor to call at my office, as I wish to confer with you about the best method of encouraging county agricultural societies.

I am, very respectfully,

Your obedient servant,

H. I. KIMBALL.

A Hint to our Agricultural Readers.

We copy from the *Western Farmer*, and adopt as the expression of our own sentiments the following sensible article, and wish that our agricultural readers would severally accept it as specially addressed them:

Most of us will agree that the leading purpose of an agricultural periodical should be to improve the condition of our agriculture—using the word in its broad sense. Just one of the many ways in which this result is to be gained, we mention here. *An agricultural paper should be a medium of communication between its readers.* It should not be simply an organ for the expression of the views of one man or half dozen men. No one set of editors, however practical, can make such a paper all it should be, unless they have the aid of its readers. We ask this help. We ask each reader of this paper to write for its columns.

No man of ordinary intelligence can long use his eyes, ears, and reason in his business, without observing at least one thing which would be useful and interesting to others in the same business. Let us have at least one such fact or opinion from each farmer who reads this.

No one man is so wise that he knows all about any one thing—certainly not about so complicated a science and art as agriculture; but what one does not, another may know, and so we wish this paper to be a medium through which we may all ask for information as well as give it.

We wish each reader to feel that every department is open to him or her for stating facts or opinions, or asking information.

Osage Orange Hedges.

We have received several letters asking us to give the best way to make Osage Orange hedges. In reply to these queries we publish the following plain instructions given by the agricultural editor of the *N. Y. Tribune*:

Procure from some reliable seed dealer the quantity of seed you want. The Osage Orange seed should be of last year's growth; older seed is unreliable and may not sprout. Before sowing the seed should be soaked in warm water for two or three days. Then pour off the water and spread the seed on tables in some cool, dry, place, turning it over once or twice every day to prevent fermentation. In the mean time select a piece of deep, rich soil for a seed-bed.

The top soil should be made mellow by plowing, forking, or spading it over two or three times. Then level the surface with a rake, and make drills two inches deep, and two and a half feet apart. In these drills sow the seed thickly and cover carefully with fine loose soil. If the ground has a tendency to bake or crust on the surface a light covering of straw may be put on the seed rows until the young plants come through the surface. The seed-bed should be kept loose and entirely free from weeds to insure strong, healthy plants, and with such treatment the osage plants will be large enough to transplant in the hedge row when one year old. During the summer prepare the hedge lines by plowing three or four furrows on either side of the intended hedge so that the ground will be loose and easily worked the following spring in setting out the young plants in the hedge row. Some of our most experienced nurserymen dig and sort the plants in the fall, have them tied in bundles and "heeled in" until wanted in the spring. When tied in bundles a portion of the tops and long roots are chopped off with an ax. They are then ready for shipping or transplanting.

Letter from Mr. Gustin.

DEEP VERSUS SHALLOW CULTURE.

Mr. Editor :—In my first letter published in the February number of the FARM AND HOME, I endeavored to show that deep culture does not make ground drier in time of drought than shallow culture, as Dr. J. Dickson Smith assumes that it does, but that, on the contrary, deep culture and thorough pulverization are the very best means of furnishing a healthy moisture to the roots of plants in dry weather. I also tried to show that Dr. Smith's idea of "embedding" the winter and spring rains in the soil by shallow culture for the use of growing crops during the droughts of summer, is a fallacy. I believe it to be an immutable or fixed principle of the growth of all cultivated plants, that to make them healthy and vigorous in the highest degree, their roots must have free and constant access to moisture. But this moisture must be *circulating* and not *stagnant*, for "circulation is the secret and source of all life—circulation of blood in the body, of sap in the plant, of water in the ocean, air and earth." Professor Jones, Editor of the Southern Cultivator, in reply to my query whether he indorsed this idea, that the winter and spring rains could be "embedded" in the soil by shallow culture for the benefit of summer crops, or if the same water "preserved" so long in the soil would not become stagnant, and injurious rather than beneficial, says, "of course we do not consider stagnant water beneficial to vegetation, but we shall have to ask him (me) to revise his (my) definition of

stagnant water. Is that which is contained in the soil during the interval between two rains stagnant?"

I must say that the learned Professor does not throw much light on the subject, but attempts to answer my question by asking another. I will endeavor, however, to comply with his request, and while I "revise my definition of stagnant water," show at the same time the absurdity of the idea that water "embedded" in the soil can yield wholesome nutriment to plants for growth. What I understand to be *stagnant water* is that which is still—not in motion. It depends upon circumstances whether that which is contained in the soil during the intervals between two rains is or is not stagnant. If a large quantity of water falls from the first rain and it is "embedded" or "preserved" in the soil upon the surface of the soil, completely saturating the ground, and standing in little puddles on the surface, and from the nature of the soil and situation cannot run off or percolate through it, then when the second rain falls, "that which is contained in the soil during the interval between two rains" is certainly *stagnant*, making the ground, sour, cold, and miry, difficult to plough in spring, retarding planting and delaying the germination of seeds, where it does not rot them, frequently converting the richest lands on a farm into marshes or swamps, producing only bushes or some coarse and worthless vegetation, and filling the air in summer with an unhealthy miasma. Were these lands properly drained, allowing the rain water to percolate quickly through the soil and pass off, they would be astonishingly productive. If it be desirable to hold the winter and fall rains "embedded" in the ground as a reservoir from which the crops are to draw their moisture during the summer, what is the use of underdraining—or of the greatest improvements in modern agriculture? Its sole object is to facilitate the passage of rain water through the soil, and if the "embedding" theory be correct then underdraining is a dangerous error, because it prevents the possibility of that embedding the winter rains in the ground, which Doctor Smith maintains is so necessary to the protection of summer crops against drought. Let anybody who desires to ascertain the injurious effect of stagnant water, contrast the sickly vegetation around a stagnant puddle with the luxuriance of the same vegetation growing on the margin of and bathed by the waters of a running stream, or let him take from a flower stand a pot in which there is a healthy and thriving

plant. Let him stop up the hole in the bottom of the pot and water it as usual. In a short time, he will find that the leaves will turn yellow and drop off and the plant will die. Examine the roots and they will be found to be rotten, and the "embedded" water will be guilty of the murder.

It must be remembered that plants may perish from drowning as well as from drought.—The water which was applied to the plant before the orifice in the bottom of the pot was closed, not only gave up the ammonia and carbonic acid gas which it held in solution, but it also made little openings in the soil in its passage through it which were immediately filled with air and which also gave up those gasses for the support of the plant. But the closing of this orifice saturates the soil with a stagnant moisture, and completely prevents the access of air which is as necessary to the roots of plants as it is to the lungs of animals. Place upon a table a vessel of water in which there are a number of fish.—The water is stagnant and the fish will soon die; but if the same vessel be placed in a carriage so that a considerable motion is given to the water and fresh air can be absorbed, the fish can be carried from Florida to Canada with safety. Circulation is life, stagnation is death.

Another objection of Dr. Smith to deep culture is that cuts the roots of plants. He says: "Roots are the feeders of the plant. Nature supplies these feeders just as she furnishes arteries and veins of the animal organism, and precisely for the same purpose. As we cannot sever an artery or vein with expectation of invigorating the health of an animal so we must not lacerate the roots of a plant expecting to promote its growth. In the one case we would debilitate the animal and in the other cripple the plant."

There is undoubtedly some analogy between the animal and vegetable kingdoms; but in many respects there is a greater difference between the nature and functions of the roots of plants, and the arteries and veins of animals, than there is between chalk and cheese. It is not news to any one that to sever the arteries and veins in animals, will "debilitate them." I am quite ready to concede this much and more. But it is quite new to any farmer or gardener of experience that to prune the roots of trees and plants will "cripple them," to the same extent that cutting the veins and arteries of an animal will debilitate it.

The feeders of a plant are its leaves and the rootlets or small fibrous roots growing from the

larger ones, and it is evident that whatever means are used to increase the number and activity of these feeders and to place them in a position where they can at all times obtain a full supply of moisture and nutriment and where they are least exposed to accidents from the sudden extremes of heat and drought or wet and cold, will promote the rapid development of the plant.

The effect of shallow culture is to promote the growth of the upper roots of cotton and other plants near the surface of the ground, exhausting more or less this portion of the soil, building up the plant in the early stage of its growth, exposing it to dangers of scorching heat of the summer sun or of the drowning rains. The long, fibrous, thread-like roots of cotton are extremely delicate; but they imbibe moisture from the soil much more rapidly than the larger roots, which as they grow older become coated with a corklike substance almost impervious to moisture. In time of great heat and drought, these surface rootlets are soon deprived of their necessary moisture by the heated earth and they wither and disappear altogether. Then for want of nourishment the fruit drops off and rust or other disease attacks the leaves. An excess of wet weather is equally disastrous. But on a well prepared and well drained soil deep *after*-culture encourages the lower roots to grow downward obtaining their supplies of food from a lower depth of the soil. Later in the season this after-cultivation ceases, when the ground becomes more or less shaded by the increased growth of the tops and branches which shield these rootlets from the hot sun, and thus they grow and multiply with great rapidity in the clean mellow soil of the fertility which has not been exhausted, as would have been the case if the surface roots had been allowed to grow from the first. The soil is soon filled with a complete network of small fibrous roots to the very surface, which drink in the dews all night, affording abundant nutriment to the plant at a time when it is most needed to form and mature its fruit.

But even had we any doubt that deep after-culture of summer crops, making the land pervious to air and moisture and pulverizing it so that the delicate roots may penetrate deeply in search of food, we cannot see how Dr. Dickson Smith can maintain his theory of shallow after-culture from the first to the last working of the crop. It is known to all who have raised cotton that the ground between the rows of corn or cotton may be worked deeply several times

after planting without disturbing the roots at all, and that in a dry soil or one which compacts after rains, deep working is indispensable to healthy growth. But I maintain that cutting or pruning the roots of plants, under many circumstances, is an advantage and not an injury, and instead of crippling the plant will invigorate it and greatly increase its productiveness, and I further maintain that were it possible to keep the winter rains "embedded" (stagnant) in the soil they would poison and not benefit the summer crops. Were it otherwise all the money that has been spent in underdrainage has been foolishly wasted, and Waring and Klippart and all the scientific agriculturists who recommend the underdraining, not only of swamps and low lands but hillsides, are quacks and impostors. Very respectfully,

SAM. I. GUSTIN.

Macon, Ga., May, 1870.

Instinct in Vegetables.

The root constitutes the plant's mouth. It terminates in a little sponge. The sponge drinks up the moisture from the surrounding earth. A simple experiment proves that whatever an amputated branch may do for an hour, the mouth of the plant is necessary to its permanent vitality. Two plants are placed for this purpose, side by side, in contiguous vessels. The roots of the one are in the water or moist and fruitful earth, while a layer of dry sand above surrounds the stem. It flourishes. The roots of the second are in dry sand, while the water or fruitful earth surrounds its stem. It dies. Indeed one need not try such experiments. Nature has demonstration quite as striking.—Every boy has seen in the woods the roots of some tree, planted by the birds or the winds in the crevices of a rock, wandering down the sides of the great boulder in search of nourishment. Dr. Davy tells of a case in which a horsechestnut, growing on a flat stone, sent out its roots thus to forage for food. They passed seven feet up a contiguous wall, turned at the top, and passing down seven feet on the other side, found the needed nourishment there, which their own barren home denied them. Thus closely does the instinct of vegetation imitate the wisdom of the animate creation. In another instance, narrated by Malherbe, an acacia threw its roots across a hollow of sixty-six feet, to find its labors rewarded by the discovery of a well of water in which they plunged, and from which they drew the food it so much needed. What strange sense drew them toward the water rather than toward the rock or sand?

A yet more singular instance of this search for food is narrated by Wallace in his "Malay Archipelago."

A seed had been dropped by one of nature's husbandmen, a bird, in the decaying trunk of an old tree. It sprouted, put forth roots, branches,

a little stem. But its roots in vain sought nourishment at the breast of its dying foster-mother. At length, abandoning all hope of support from her, they pushed out from their home to seek a living. They dropped to the ground, a distance of sixty or seventy feet, and fastening there, succeeded in securing an independent livelihood. As time passed on the old trunk died, decayed, disappeared. The new tree remained suspended, as it were, in mid-air, the roots proceeding downward and the branches upward from a point about equidistant between the two.

It is not thus alone that the root exhibits its intelligence. It displays equal sagacity in selecting from the soil only those elements which its own plant requires. Sometimes it errs, and drinks in a deadly poison. But its native instinct is more rarely at fault than the supposed superior wisdom of man. Trees rarely eat unwisely. They are never guilty of gluttony.

Yet if the root be the principal feeder of the plant, the chief source of supply for its marvelous circulation, it does not alone fulfill this office. The leaves also absorb moisture from the air. "In the burning days of summer," says M. Pouchet, "I have found carpets of ice-plants on the most arid rocks in Greece. Although it had not rained for a month, these plants displayed a remarkable freshness, and their leafage was none the less covered with a coating of icicles."—*Lyman Abbott in Harper's Magazine.*

How Much Manure to a Cow?

Carefully conducted experiments show that a cow of the average size will void about 60 lbs of manure in a day, measuring about 1½ cubic feet, which is more than three cords, weighing over ten tons, for a year. It is the opinion of many good cultivators that three loads of peat or muck mixed with one load of cow-dung make a compost quite as effective for top-dressing meadows as the cow-dung itself. If this were done, we should have twelve cords of good compost from the solid excrements of one cow. It is further estimated that the liquid manure is quite as valuable as the solid. If this were carefully saved by peat absorbents, kept under the stable, or in it, it would double the pile, or be equal to twenty-four cords of good compost. If this were spread upon two acres of run-down meadow, producing a ton of hay or less per acre, it would increase the crop probably to three tons to the acre the first year, and the effects of it would be seen in increased crops for five years longer. In those two acres it would make a difference between profitable and unprofitable farming for five years. This compost, sold in many good farming districts, would bring \$4 per cord or \$96. Used on the meadow, it would produce much more in successive crops of hay. This estimate shows what may be done under favorable circumstances to increase the home supply of fertilizers. We have found that nothing pays better than labor applied to the compost heap.—*American Agriculturist.*

Careless feed, irregular drink, and rough usage after hard service, cause most of the complaint from which horse-flesh suffers.

Cotton Seed Oil Cake.

BY PROF. H. E. COLTON.

It is but within the few years past since the war that the manufacture of oil from the seed of cotton plant has assumed such proportions as to enable the public to consider a supply of cake from that source reliable. In fact, it is probable that many of our people do not know it either as an article of trade or use; yet thousands of tons of this cake are annually shipped to England, and the production will be this year not far from one hundred thousand tons. The business is yet in its infancy, and the value of the oil and cake but little known. In the early commencement of the manufacture, the great obstacle was met in the difficulty of hulling the seed, and the clinging lint was also a source, of trouble. Now, both these articles are turned to valuable account. Heretofore, the decorticated cake, while being a good fertilizer, was a dangerous food for cattle, as the hard hull resisted the action of the digestive fluid. This caused a great prejudice against it in England; some, however, still prefer the decorticated, but only as a manure.

The value of linseed-cake is well known to all our farmers in this country, and we desire to show all our farmers in this country, and all who use such feed the greater value of the cheaper article derived from cotton seed.

The best American linseed-cake gives by analysis:

Water, 10.07; oil, 12.88; albumen, 22.86; gum, 86.25; fibre, 12.69; mineral matter, 6.85.

Cotton-seed cake, by an analysis, which we think is rather under than over its actual value, gives: Water, 8.29; oil, 16.05; albumen, 41.25; gum, 17.44; fibre, 8.92; ash, 8.05.

In the constituents we find 6.58 of nitrogen. The ash gives 8.62 of phosphate of lime.

Hence, we have a supply of bone-forming material, and an abundance of the nutritive, namely:

Linseed Cake.	Cotton-seed Cake.
Fat-formers.....48.68	33.49
Flesh formers.....22.26	41.25
Accessories.....12.09	8.92
Water.....10.07	8.29

Indian cornmeal, the best known fat-forming food, has: Flesh forming, 11.0; fat-forming, 66.7.

For the mere purpose of fattening, therefore, the cotton seed cake has about one-half the value of Indian corn, and about two-thirds that of linseed cake; but when we consider its great excess over both of flesh-forming and strictly nutritive elements, we see its true value.

Corn meal contains 81.1 of nutrition; wheat flour contains 77.7 of nutrition; cotton seed cake contains 74.7 of nutrition; linseed cake contains 70.8 of nutrition; rye meal contains 70.1 of nutrition; oat meal contains 69.1 of nutrition; peas contain 65.0 of nutrition; lentils contain 64.6 of nutrition; kidney beans contain 63.2 of nutrition; white field beans contain 63.7 of nutrition; barley meal contain 65.0 of nutrition; buckwheat meal contains 61.1 of nutrition; white clover hay contains 58.7 of nutrition; Lucern clover hay contains

50.7 of nutrition; red clover hay contains 41.2 of nutrition.

In nutritive value, it stands third. In proportion of nutritive strength to price, it stands first. Cornmeal is worth about 2½ cents per pound; wheat flour as much or more; cotton-seed cake 2 cents or less per pound; linseed 2½ @ 2½ cents (we quote New York wholesale prices;) rye meal about 2½ cents. Good clover hay at 1½ cents a pound, has more nutriment in proportion to price, but does not belong to exactly the same class of food as the cake.

AS A FERTILIZER.

Cotton seed, rotted by exposure to the weather has for many years been used by the planters of the South to reinvigorate their lands. The cake is now used in England for this purpose, and ranks very high in the list of fertilizers.

In the foregoing analysis, we have stated that it contains 6.58 of nitrogen, also sufficient hydrogen to make 10 per cent. of ammonia. The ash of the cake contains 8.04 of phosphate of lime. In the estimation of manure, nitrogen ranks 4½; soluble phosphoric acid 8½; insoluble 1½; potash 1. The cotton seed cake, in its phosphate of lime, contains 2.45 of soluble phosphoric acid.

Best guano contains:

	Vol.	Soluble	
Matter.	Nitrog'n.	Ph. A.	Insol.
Best Per'n guano.....64.25	14.98	.....	13.16
Govern't guano.....48.78	5.50	.....	12.98
Rhodes' Sup'rph'e.....46.18	.....	11.11	4.02
Mapes' ".....25.81	1.35	.11	9.10
Lane's ".....30.78	.....	14.77	4.48
Lodi Poudrette.....41.50	1.38	.....	6.80

Hence, we see that one ton of cotton seed cake contains very nearly one-half as much fixed nitrogen as the best guano; and it is a notorious fact that there is hardly a ton sold in this country unadulterated. An English farmer, writing on this subject, says that he prefers the cotton seed cake to any other fertilizer he knows of. Our table will show its value in comparison with the manufactured phosphates—too many of which have a sample made for show, and a large lot, very different for sale. We claim that cotton seed cake, barnyard manure, swamp muck, in compost with straw or leaves, and perhaps a little or marl, will make for the farmer a better and by far more reliable fertilizer than any guano or phosphate he can buy. We have stated the price of the cake above and we submit that there is no other fertilizer either so cheap, or containing so many valuable qualities.

It is estimated that the past season produced 2,700,000 bales of cotton (500 pounds to the bale.) At 1,000 pounds seed to the bale, that would give 1,850,000 tons of seed. Of this at least 1,000,000 can and will be made available in the future, which, deducting the loss in the hull, etc., would give 425,000 tons of cake. This amount may be safely calculated as to come before the American people for a market in the next ten years.—*Hearth and Home*.

It is said that a small amount of lime mixed with wheat that has acquired a musty smell by having been slightly heated, will sweeten without injuring the wheat.

Manuring Land.

A writer in the *New England Farmer* discourses as follows, in regard to the right way of applying manure to land:

I am surprised to see, as I do in going over the country, how many of our old farmers are holding on to the old mode of applying manure by dumping it from the carts or wagons on the fields in small heaps, where it lies sometimes for two or three weeks, and then send a boy or a hired man to spread it on the land, when the consequence is that on the spots where the heaps were laid the grain will lodge and spoil, while on the outskirts it will be so poor that it will need a drum and fife to get it together.

The last mode of applying manure used to be the exclusive mode in this section of the country, but ten years' experience and observation of a different mode has brought farmers around, and I do not know of an individual in my section who does not now apply it on my plan.

My rule of applying manure is simply this: After the field has been plowed and dragged down, the manure is loaded on wagons and taken direct to the field and spread on the land right from the wagons. In plowing, each land is laid off about twenty-one feet wide. By driving the wagon in the middle of the land, it can easily be spread from furrow to furrow, and the men being in the wagon can at once see when they get it all even. With a new hand I always go out myself with one load and see that he starts right; after which there is generally no further trouble.

After the manure is applied to the whole field we put on the gang plow. And here allow me to say, that, of all the implements I have ever used for putting manure on the land in its proper place, according to my idea, this suits me the best. It has a wooden frame with three small plows attached. It has handles like a plow; also two wheels, one on each end, and can be lowered or raised by means of bolts and screws and gauged to run one, two, three or four inches deep. It puts the manure under as effectually as a plow. I generally set it to run about two inches deep, which is about my idea of the proper depth to cover manure.

Now for the effects. A little experiment just comes to my mind: I purchased from a neighbor about forty loads of manure and applied it to one portion of a field, the whole of which was to be sowed to rye; the other portion of the field had no manure. In other respects the treatment of the whole field was precisely alike. Each portion of the whole field required the same amount of rye for seed. The manure cost me fifty cents per load. When the crop was harvested and sold, the manured part paid me \$2.50 per load over the unmanured the first year; the second year it made \$1 50; making \$6 per load, besides effecting a permanent improvement on the land.

In all my experience I find that two loads applied on or near the surface, after plowing, or harrowing, or cultivating, or gang plowing—which last is my mode—is worth and will give as much benefit as at least three loads plowed under, especially if it is an old sod. When I

have a clover sod and very coarse manure, I do sometimes, for corn or potatoes, plow it under, but not very deep. Then by plowing a little deeper the next Spring it brings the manure just in the place it is needed for the wheat, barley, or oat crop.

From Proceedings of American Farmer's Club.

Manures for Cotton.

Mr. Curtis stated that a friend of his, Thomas L. James, recently purchased a farm at Aiken, S. C., the soil of which is suitable for cotton, which staple he is anxious to cultivate, but as there is dearth of home manure he must look elsewhere, and would like the Club's notion as to what he had better buy.

Mr. Fuller answered—Guano or bone-dust.

Dr. Trimble alluded to a discussion he listened to last summer, when some Georgia planters were assembled. A variety of opinions were expressed, some thinking that guano soon runs out, and others that bone-dust is not reliable, because it is so apt to be adulterated. In conclusion, Dr. Trimble remarked that the Southern cultivators should pay more attention to the economizing of what home manure they have, and also to take measures to increase the amount by better practice.

J. B. Lyman—Cotton needs two sorts of fertilizers, one to push the growth, and another element to ripen the seed and give long and silken staple. We cannot expect many cotton bolls on a small plant, nor choice cotton from small, withered seed. The stuff that will push the young plant is not that which will do most for the seed and staple. For instance, dry Sea Island guano, for which he will give \$90 a ton, will push the young plants, but it burns and wears out the soil. Coarse bone is slow. Fine bone is as good a separate manure as he can buy. A fragment of bone as big as a grain of wheat will do the first crop to which it is applied no good. A piece as big as a grain of corn will be two or three years unchanged in the soil. Let him make a mixture of a bushel of plaster, a bushel of bone-flour, and a bushel of guano. This will fertilize, yet not exhaust. But no bought manure will give advancing fertility to a cotton field. He cannot afford to buy enough. Muck, yard manure, rotted turf and leaves, should be his dependence. He can call in the commercials as allies. But you cannot enrich a place by bagfuls.

HOW TO CLEAR LAND FROM LARGE LOGS.—J. S. Stone, of Belvidere, Ohio, in reply to an inquiry recently made for a log-roller to clear new land from logs, states that the best way to get rid of large logs is to blast them with powder. It takes but little powder, he says, and the logs can then be easily handled and put in piles for burning.

TO MAKE HENS LAY.—A piece of lard as large as a walnut, mixed with dough, will cause a hen to commence laying immediately after she has been broken up from sitting; and by giving hens fat this way, they may be kept laying all winter.

Scientific Department.

For the Southern Farm and Home.

Facts About Roots.

BY PROFESSOR W. LEROY BROWN.

We submit herewith a few facts about roots, their growth, etc., compiled chiefly from that admirable work of Professor Johnson, "How Crops Grow," that may prove instructive to some of your readers, and suggestive of the proper and rational method of applying fertilizers. The roots of plants grow chiefly by lengthening, and very slowly by increase of thickness. This experiment was made. The young root of a pea was divided by ink marks into four equal parts. Three days thereafter, on measuring the divisions, the first two nearest the pea had scarcely lengthened, the third was double its original length, and the fourth, at the extremity, was eight times as long. From other experiments, by making smaller divisions, it is concluded that the part of the root which grows is about one-sixth of an inch from the tip. For this reason, when the end of a root is out off, in transplanting or otherwise, it never increases in length.

Those plants whose stems increase by external growth, by new rings, have *tap-roots*, while those whose stems increase by inside growth, as the cereals, grasses, etc., have *crown-roots*, a number branching from the base of the stem. From the central tap-root, lateral roots branch out, and these subdivide and branch in divers directions.

To estimate the length of the root, or of all the roots, large and small, including the delicate, hair-like fibres, is more difficult than one might at first suppose. An examination of the root, which we obtain by forcibly drawing it from the soil, even when the ground is loosened around, would give us a false estimate of the extent of surface reached by the delicate network of hair-like roots which thus would be broken off. Schubart estimated the quantity of roots in this manner: He made an excavation six feet deep in a field of rye, one of beans, and one of peas. A stream of water was thrown against this vertical wall until the earth was washed away, to expose the roots. He says they presented "the appearance of a mat or felt of white fibres to the depth of about *four feet* from the surface of the ground." He found the roots of winter wheat, forty-seven days after sowing, as deep as *seven feet*, in a light subsoil. Ordinarily, the roots of wheat, rye, and clover

were found at the depth of *three or four feet*. The roots of corn in rich earth do not extend over two or three feet. Sometimes, in a light, sandy soil, they extend to a length of ten or fifteen feet. The roots of clover, according to the journal of the Royal Agricultural Society, and especially of lucern, extend, in some cases, to the length of 80 feet.

A German agriculturist (Hellriegel) raised some plants in large pots, and then, by carefully washing all the soil away, he estimated the length of the roots. He found that after the diameter of the roots diminished to one-hundredth of an inch, still innumerable branches spread out, with their delicate fibres filling every crevice of the soil. By weighing the entire mass of roots, and selected average portions whose length was determined, he was enabled to calculate the entire length of it. He thus estimated the whole length of a fine barley plant to be as much as 128 feet, while the root of the oat plant he found to be equivalent to 150 feet in length. He also found that the quantity of roots depended upon the character of the soil. While a barley plant produced 128 feet of roots in a rich garden soil, in a compacter soil a similar plant had only 80 feet.

These facts afford a clear conception of the extent of surface from which a plant is nourished, how its delicate fibres ramify in every direction in search of food, and to what depth they extend. The advantage, or rather the necessity, of thorough pulverization and deep plowing, to secure vigorous growth, is shown by the experiments just mentioned, where, in one case, 128 feet of roots were obtained, and in the other, in a *compacter* soil, the plant had only 80 feet.

For the purpose of determining the proportion between the amount by weight of roots and the stalk, Schubart, having dried both stalk and plant, found the quantity of roots of winter wheat, examined in April, to be 40 per cent. of the stalk; but, examined in May, to be only 22 per cent. The roots of peas, four weeks after sowing, he found to be 44 per cent. of the vines, but at the time of blossoming, only 24 per cent. These facts go to show that the root is formed more rapidly in the earlier stages of growth of the plant, and that subsequently the plant grows more rapidly than the roots.

Having thus seen to what depth roots will descend, and to what extent their combined mass is equivalent, the next question of interest arises, How do they feed? In what manner do they absorb nutriment? The ends, or tips, of

the rootlets, were called spongioles, from a notion formerly entertained that all nutriment was absorbed wholly through them. This view is not sustained by experiments, and hence has been rejected. Indeed, it has been demonstrated that "the extreme tips of the rootlets cannot take up liquids at all;" but all those parts of the roots and rootlets which are "young and delicate in surface texture," are the many mouths of the plant, and are active in drinking in nutriment from the soil. When the roots become old, covered with a hard bark, and brown colored, they are no longer capable of absorption. The degree of force with which active roots imbibe water and salts in solution from the soil is sufficient to force them up the stem with considerable energy, as is manifested in the flow or *bleeding* from a young vine. A number of years ago the experiment was made of attaching a mercurial gage to a freshly cut stump of a grape-vine, and it was found that the sap rose with force sufficient to sustain a column of water 36½ feet. This rise of fluids in the roots and stem cannot then be due to capillary attraction alone, since by that force no liquid can ever be made to flow out of the stem. The fine fibres of many roots are covered with minute hairs, to be seen only with the microscope, which are called *hair-roots*. These are the principal absorbers, and in their infinite ramifications expose an absorptive root surface to the soil almost incalculable. This remarkable absorptive power of the roots of a living plant is due to the combined forces of nature, called capillarity, chemical affinity, liquid diffusion, and osmose. To discuss these would occupy much space and carry us far beyond our prescribed limits.

From careful experiments made, roots would seem to be "endowed with a kind of intelligent instinct," to enable them to probe about in search of food. The reason is this: Roots at first issue independently of the nutritive matter in the soil, and absorb food wherever they find it. Those roots which find nutritive food grow and support the plant. If food is abundant, they multiply rapidly their delicate fibres and enlarge. Those which find little food fail to be developed, and may perish. This explains what has often been observed, that in bones and masses of manure are frequently found new plants, covered with a net-work of delicate rootlets. In a poor, sandy soil, the roots are always long and slender. They wander far in search of food; and thus we conceive a great part of the vigor of the plant is consumed in forming roots.

But, in connection with this subject, some very instructive and suggestive experiments have been made. Some corn was planted in glass cylinders filled with a poor clay soil, in which, in different positions, a quantity of fertilizing mixture was placed. After some months the soil was all washed out and the position of the roots observed. It was found that when the fertilizer had been placed about an inch below the surface, there was the greatest development of fibrous roots; when placed about the middle, just there the roots had matted in a spheroidal form; when placed on one side, the roots had mainly developed there; and even when the fertilizer was placed in a layer at the bottom, the roots were found to extend, "attenuated and slightly branched," until they came in contact with the fertilizing mixture; then they greatly developed, and extended their fibres in every direction. The result was, that in every instance "*the greatest development of the roots occurred in the immediate vicinity of the material which could furnish them with nutriment.*"

What do these experiments teach us? The important question with us is, What is the rational and most advantageous method of applying fertilizers? Some put them in shallow, some deep, some in the hill, or drill, and some insist they should be put broadcast. Now, the experiments show that the roots are chiefly developed *just where the fertilizers are placed*. Hence, when the fertilizers are put in shallow, the fibrous roots are developed just where they will languish and die for moisture so soon as the hot sun, unaccompanied by rain, parches the soil. When the fertilizers are deep, the fibrous, active, absorbing roots are all developed deep under the ground, and hence are by so much less liable to be injured by drought. When the fertilizers are not thoroughly mixed with the soil, the roots are more compactly developed, and hence have less soil from which to drink in moisture. Therefore, we infer that it is not the rational, and hence not the best method, to manure corn by placing the fertilizer, as cotton seed, "*in a heap near the hill.*" The fibrous roots should be invited over a large area by a more uniform distribution, so as to have soil from which sufficient water can be obtained. The rational method, then, is to invite the roots to a depth sufficient to protect them against drought, and to cover an area sufficient to afford them a large drinking surface. To secure these ends, *the fertilizers should be put in deep and thoroughly intermixed with the soil.* Some of our best farmers, we believe, practice

this by depositing the fertilizer in a deep furrow and then thoroughly intermingling by ruaning, *after the fertilizer is sowed*, a subsoil plow in the same furrow. Would it not be a more secure provision against drought, where as much as four hundred pounds to the acre are used, to thoroughly intermingle it with the soil in three parallel furrows instead of one? It is obvious, in a country where there is no probability of suffering from a drought, there would not be the same necessity of placing the fertilizers deep under the surface; but here we should prepare for lack of rain, and work accordingly. If my time permits, I propose to repeat the experiments with cotton that Nobbe made with corn in the glass cylinders.

Kalsomining Parlor Walls.

It is a popular error to believe that the materials for kalsomining are very expensive, and also that few men have sufficient skill to apply the liquid even after it has been properly prepared. For this reason, people are frequently deceived into paying exorbitant prices for this kind of work.

The materials employed are good clear glue, Paris white, and water. Paris white is sold here in New York city and Brooklyn for two to three cents per pound. Itinerant kalsominers frequently charge twenty-five cents per pound, as "they use nothing but the genuine silver polish, which is scarce and very expensive."

In case the wall of a large room, say sixteen by twenty feet square, is to be kalsomined with two coats, it will require about one-fourth of a pound of light-colored glue and five or six pounds of Paris white. Soak the glue over night, in a tin vessel containing about a quart of warm water. If the kalsomine is to be applied the next day, add a pint more of clear water to the glue, and set the tin vessel containing the glue into a kettle of boiling water over the fire, and continue to stir the glue until it is well dissolved and quite thin. If the glue pail be placed in a kettle of boiling water, the glue will not be scorched. Then after putting the Paris white into a large water-pail, pour on hot water, and stir it until the liquid appears like thick milk. Now mingle the glue-liquid with the whitening, stir it thoroughly, and apply it to the wall with a whitewash brush, or with a large paint brush. It is of little consequence what kind of an instrument is employed in laying on the kalsomine, provided the liquid is spread smoothly. Expensive brushes, made expressly for kalsomining, may be obtained at brush factories, and at some drug and hardware stores. But a good whitewash brush, having long and thick hair, will do very well. In case the liquid is so thick that it will not flow from the brush so as to make smooth work, add a little more hot water. When applying the kalsomine, stir it frequently. Dip the brush often, and only so deep in liquid as to take as much as the hair will retain without letting large drops fall to the floor. If too much

glue be added, the kalsomine cannot be laid on smoothly, and will be liable to crack. The aim should be to apply a thin layer of sizing that cannot be brushed off with a broom or dry cloth. A thin coat will not crack.—*Manufacturer and Builder.*

EXTRACTING BULLETS FROM WOUNDS BY THE AID OF ELECTRICITY.—A writer in the *Gentleman's Magazine* says: "Curing should be as important as killing in the arts of war; extracting your enemy's bullets from your own flesh is the next duty after putting your bullets into his flesh. Now bullet probing is a tiresome and painful operation, one that ought to be reduced to the perfection of simple certainty. So humane philosophers have thought; and they have done their best to give their thinkings tangibility. But we are bounded by our means; and while there were none known whereby a lump of buried lead could be told from a fragment of shattered bone, probing was slow work. However, the next time—far be it—that wholesale bullet extraction has to be performed it is to be expected that the army surgeon's labors will be lightened by the help that electricity will afford; for two inventors have independently proposed methods of searching for and drawing out metallic missiles from the wounds they have inflicted. Both men told their ideas to the French Institute at one and the same meeting during the past month. M. Trouve was one; he who made the electrical jewels that delighted fashionable Paris for a few months two years ago. His new bullet-probe is a double-pointed needle, each point being connected by a wire with a little electric battery and a bell, which rings whenever the two needle points are united electrically; that is to say, whenever they both touch a piece of metal. With this divining-rod, bullet-searching is a simple business. The suspected part of the body is probed with it, and the instant the points touch lead the bell announces the fact. The bullet found, the worse half of the extractor's task is over. This plan was suggested by an Englishman, I fancy, some two years ago, but not put to trial till M. Trouve made an instrument. The other proposed is of more limited application. M. Melsens is its author, and he promises to draw fragments of iron or steel from a flesh wound by the help of powerful magnets. He can do nothing with lead, though, because it does not follow the loadstone. Trouve's is the best idea. There is quaintness in the notion of a bullet telegraphing its whereabouts."

GOVERNMENT.—The early settlers of Connecticut proclaimed that the colony should be governed by the laws of God, until they had time to make better.—*Washington Irving.*

SLEEP.—It is so like death that I cannot trust myself to it without my prayers.—*Str Thomas Browne.*

THE PAST.—What is every day of a wise man's life, but a censure or critique on the past?—*Pope.*

"One thing," said an old toper, "was never seen 'comin' through the rye, an' that's the kind of whiskey one gets now-a-days."



The Poultry Yard.

FEEDING POULTRY.—Onions are said to be an admirable food for fowls, or rather an adjunct food. If given regularly, it is said that they will prevent the attack of more ordinary diseases of poultry. Meat is said by some to be an essential food for poultry, especially in winter, when they cannot get the worms they pick up in summer. Others, again, maintain that the habit of giving meat to poultry is productive of grave evils—the cause of many of the worst forms of disease which affect them. By these authorities it is called unnatural food, inasmuch as the digestive organs of the birds are not fitted to assimilate it. There must, we think, be some mistake in all this; for we know of a surety that fowls devour, when they can get it, and entirely of their own accord, an enormous quantity of animal food; here it is not cooked; the game found in nature's garden is raw. If meat is an unnatural food for poultry, they certainly have a most unnatural appetite for it. Throw in one lump of meat among a lot of fowls; if not literally a bone of contention, it is something vastly like it, so eager are all to get a grab at it. We believe the habit of giving much food in a short space of time to poultry is a bad one. If you notice their habit you will perceive that the process of picking up their food under ordinary, or what we may call the natural condition, is a very slow one. Grain by grain does the meat get taken, and with the aggregate no small amount of sand, small pebbles, and the like, all of which, passing into the crop, assist digestion greatly. But in the "hen's" wife mode of feeding poultry, a great heap is thrown down, and the birds allowed to "peg away" at such a rate that their crops are filled too rapidly, and the process of assimilation is slow, painful and incomplete. No wonder that so many cases of choked craw are met with under this treatment. —*Mark Lane Express.*

HEALTHY CHICKENS.—A correspondent of the *Rural New Yorker* says:—The way I keep my fowls in health, I clean out the house once a week; put wood ashes under the roosts; have iron basins for them to drink from; whitewash inside of hen-house with hot lime; put a little kerosene oil on the roosts once a month. The main food is oats and cake of scraps to pick on. I never feed but once a day—at noon, or

when I shut them up at four or five in the afternoon. When they run out then give them all they will eat. In my experience there is no easier way to get diseased fowls than to keep them stuffed; it makes them lazy, and they won't work as much as they ought to be kept in a healthy condition. I never had any gapes in chickens. When fowls begin to droop I give three large pills of common hard yellow soap; it is the best thing to cleanse a fowl I know of. I follow it for three days; give them nothing to eat, and plenty of pure water to drink. In desperate cases give a half teaspoonful of tincture of lobelia.

THE BEST POULTRY.—The American Institute Farmers' Club recently appointed a committee to visit and report upon the poultry on exhibition at the New York State Poultry Show.—This committee, in order to obtain a condensed and satisfactory account of the best breeds, addressed questions to several well-known poultrymen, to which they received answers, the gist of which we give below.

First.—What breeds are at present most prized? A.—Different breeders disagree, but it is at present thought that the majority prefer the Houdans, dark and light Brahmas, and Leghorns. Second.—Are pure breeds preferable? A.—The pure breeds are better than half-breeds as layers, but not quite so hardy. Third.—What fowls are best layers? A.—White Leghorns and Aylesbury ducks. Fourth.—Which grow fastest, and make most dressed meat? A.—Creve-Coeurs, light and dark Brahmas, or Aylesbury ducks. Fifth.—For eggs and flesh both, which are best? A.—Houdans. Sixth.—For flavor and tenderness of flesh, which breeds excel? A.—Houdans, Dorking, or Game and Rouen ducks. Seventh.—For mothers, which have you found best. A.—Game and Dorking. Eighth.—Is the Dorking hardy in this climate? A.—No. Ninth.—What feeding and range do you recommend? A.—Ground feed in the morning, mixed with warm water, whole grain at night, a little meat occasionally in winter, with some broken oyster-shell, all the range possible, and a good warm house, are all that is necessary. Tenth.—What is your opinion of poultry raising on a large scale? A.—It can be done with great profit, if the grounds and houses are large enough. Every hundred fowls should have at least an acre.

Horticultural Department.

For the Southern Farm and Home.

Manures for the Pear.

HOW, WHEN, AND WHAT KIND TO APPLY.

BY DAVID Z. EVANS, JR., CHESAPEAKE CITY, MD.

Does the Pear require manure? Is there any use of manuring it: the same as an annual fruit, or vegetable? This is about the drift of the questions or surmises, which are daily agitating the minds of many who raise fruit, or who desire to; yet very often we see the wrong answer given by those who ought to be competent to give an entirely opposite version.

Now, I think, and not only think, but positively assert, that the Pear requires the best of both cultivation and manure; but it is an important item to know the proper sorts of manures to apply, how to apply, and when they should be applied, which latter is more important than some would suppose.

I will first take up the subject of manures and the proper kinds to apply to obtain the best results; but as there are so many different special manures, I cannot, nor do I wish to treat of all of them, but only of a few of those which I have deemed to be worthy of any considerable notice, and will also give the results of a few experiments with manures which are not accounted special, but most of which are, in my estimation, worthy of more attention than some of the special ones.

We have some Pear trees, which are, as near as I can arrive at it, some forty years old, they were neglected for a couple of years, and of course the crops decreased in the same ratio; but the trees were treated to about a cart load apiece, of fine, rich stable manure, and the next fruit year they showed the attention that they had received, the trees putting out fine, rich shoots, as well as producing fruit of a larger size, and much better quality than they had grown for several years, and by continuing the programme every year, we have had the satisfaction of reaping the benefit, as well as assuring us of the fact that stable manure is suitable for the Pear, and not as I often hear stated, that it only induces a rapid growth of wood, without materially increasing the crop of fruit; but do not put it immediately on the roots, especially with young trees, but at some distance from the roots, generally on the surface, the rains taking it down to the rootlets to nourish the tree gradually and safely.

A manure, which, I think, will be found to

answer all reasonable expectations, as well as being convenient to almost all, and cheaply obtained, is leaves from the woods, which should be spread in the bottom of the hole before planting, as well as using it in the spring, taking care to have it buried, so as not to be blown about, or to be a harbor for rats and mice.

Another very desirable manure for young trees, as well as for old ones, although very desirable for the former, is muck, after it has undergone a freezing process; it can be used in all ways and at all times, vastly benefitting the trees as regards growth and productiveness.

Very few are aware that ground bone, when buried, is very beneficial in its results, for it seems to be rich in the very essential constituent which goes to invigorate the Pear, and its effects will last for several years, not being exhausted by the first year's growth.

As regards iron filings, blacksmith's cinders, etc., I have a very poor opinion, as a quantity scattered around the trees did not either increase or decrease the yield or growth the least iota; but some will still insist that they are of incalculable benefit to Pears, but readers don't believe it, for if you do you will only go to the expense and trouble of trying the experiment, only to find out that your trouble was in vain.

I saw it stated somewhere, that an application of the above averted or cured some particular disease or diseases—the name or names not now remembered—to which the Pear was incident, if it does have such a beneficial result I have unhappily failed to discover any benefit derived from its application for the purposes just set forth.

Dr. Swasey, of the Southern Horticulturist, gives the following as a manure for the Pear, and as it is very good for the purpose named, I will give it for the benefit of your readers. "Take one barrel ground bone, or one of good superphosphate of lime, two barrels unleached wood ashes from hard wood, one barrel of unslacked lime, one sack of salt, and two two-horse wagon loads of dry muck, or rich leaf mould. Slake the lime with a saturated solution of salt; make a bed with one load of muck, eight or ten feet in diameter, upon this spread, in the order named, the lime, bone, ashes, salt; covering all with the remaining load of muck. Give the bed a good soaking with pond or rain water, this soaking to be repeated weekly, unless a rain should render it unnecessary." This manure is very good for other crops, and makes a strong and lasting manure, as well as a cheap one, in consideration of its worth.

Some other time I will again take up this sub-

ject, and try to give some additional particulars, which I cannot now do, space and time not permitting.

For the Southern Farm and Home.

How to Make a Peach Orchard.

In the States of Delaware, Maryland and New Jersey, fruit growing for market has become one of the most important and most lucrative branches of farm industry. Large increases are realized every year from fruit-raising, and it has been found that no part of a farm yields so large a profit at so little cost of labor or money, as the orchard.

In the Southern States where the allegiance to King Cotton is undivided, fruit-growing for profit is very rare. Except those of Major Moses, near Columbus, and Mr. Buckner near Milledgeville, we do not know of any large fruit farms. There are a few small orchards connected with nurseries of fruit trees, from which fruit are sold, but no regular fruit farms. I would seem, however, that with the soil, climate and length of season, which we enjoy, this branch of industry might be much extended with advantage. In Middle Georgia, particularly, where it rarely happens that spring frosts kill the early blooms of the peach, and where the crop is never an entire failure, market-orchards would certainly pay, and we venture to say, counting difference of cost for labor, etc., would pay far better than cotton.

Without abating, to any considerable extent, our loyalty to His Fleecy Majesty, it would be well if some of our planters would give a fair trial to a few acres planted with peach trees. Every planter has land which is "not good enough for cotton." Take twenty acres of this and prepare it for an orchard, and after the trees begin to bear, tell us frankly how the net profits compare with those of any twenty acres of the best land devoted exclusively to cotton. We would have the experiment made in the most economical way. Those who are unable or unwilling to buy trees from a nursery at 25c. or 50c. apiece, can raise their own trees. They can easily procure peach stones. In the month of October clear a space of ground, excavate it to a depth of three inches, fill the excavation with the stones, cover with about two inches of good soil, and then strew pine straw, brush, or leaves, over all, to protect the bud against the frost. In the spring when the stones break and the kernels begin to swell, the bed may be opened and the kernels transplanted in rows four feet apart and about five or six inches dis-

tant in the row. Keep the land round these seedlings mellow and clean, by plowing and hoeing, and in the following fall they will be large enough for budding.

The buds should be taken from thirty trees of three or four years old, and one hand who is skilled can bud in a day from fifteen hundred to two thousand trees. It is a very simple process. Cut the buds about one inch in length, leaving the eye in the middle. Cut a slit in the seedling close to the ground of the same length as the bud, insert the bud in this slit and make it fast by a strip of matting, leaving the eye of the bud exposed. In a few days the union of the bud and the seedling will have become perfect, and the wrapping may be taken off. In the following spring cut the seedling down to about one half inch of the bud, keep the stump free from suckers, and by fall the budded trees will have attained a growth of four or five feet.

When they are one year old they may be transplanted to the orchard. It does not matter much whether this is done in the spring or fall, though we rather prefer the fall. Plant in rows from 16 to 20 feet apart, and the same depth as they stood in the nursery. If planted in the fall shorten them about half their growth in the following spring, and continue this shortening until they have attained their third year's growth, taking care all the time to cut away all useless growth, leaving three or four limbs to form the tree.

When the trees have borne their first crop manure with from 300 to 400 lbs. per acre of some good ammoniated superphosphate, and if proper care is taken to guard against borers, the orchard will be fully established. While the trees are too young to bear, the ground need not be unproductive. Corn, cotton or potatoes may be grown between the rows.

The earliest peach known in this country is "Hale's Early," (see frontispiece), which matures its fruit fully two weeks sooner than any other variety. POMONA.

FRENCH METHOD OF RAISING TOMATOES.—As soon as a cluster of flowers are visible, the stem is topped down to the cluster, so that the flowers terminate the stem. The effect is that the sap is immediately impelled into the two buds next below the cluster, which soon push strongly and produce another cluster of flowers each. When these are visible, the branch to which they belong is also topped down to their level, and this is done successively. By this means, the plants become stout dwarf bushes not above eighteen inches high. In order to prevent their falling over, sticks or strings are stretched horizontally along the rows, so as to

keep the plants erect. In addition to this, all the laterals that have no flowers, and after the fifth topping, all laterals whatsoever, are nipped off. In this way the ripe sap is directed into the fruit, which acquires a beauty, size and excellence unattained by other means.—*Horticulturist*.

For the Southern Farm and Home.

LAWNS.

BY THE LATE WM. N. WHITE.

The main feature in the ornamental grounds of every place, be it cottage or palace, should be its lawn. How can a place be rendered tasteful and agreeable in the easiest manner? Downing has answered this question: "A soft, verdant lawn, and a few forest or ornamental trees well grouped, give universal pleasure; they contain in themselves in fact the basis of all our agreeable sensations in a landscape garden. If your place is large, so much larger and broader is the good effect of the lawn, as it stretches away over gentle undulations alternately smiling and looking serious in the play of sunshine and shade that rest upon it. If it is small, a mere bit of green turf before your door, then it forms the best and most becoming setting to the small beds and mosses of ever-blooming roses, verbenas and annuals with which you may embroider it like a carpet."

In pictures of residences observe those most attractive to the eye. The dwelling rises from the lawn in the foreground flanked at its sides by stately and graceful groups of trees and these are connected with a mass of the same in the background, which shelters and conceals the necessary offices of the main building. But none of the trees except mere shrubbery should be nearer than thirty feet from the dwelling, as they render the air too close, damp, and unwholesome.

To make a lawn that will always prove satisfactory requires attention to the following particulars: The soil must be so deeply moved that it may, so long as the lawn last, readily take up all the rain that falls, and store up sufficient for the wants of the turf during periods of drought; at the same time, if its character is such that in ordinary rains it becomes sodden and long remains wet, while the depth moved in its preparation, must not be lessened, the surplus water must be removed by drainage. An ill-drained soil, it is proved by observation, suffers more from droughts when they occur, than grounds naturally in proper condition on the same soil after it has been drained.

The proper depth for subsoiling or trenching for a lawn is not less than two feet, and while

preparing it the rich surface soil should be left at the top and further improved if required by the addition of well rotted manure, leaf mould, or manipulated manure. Pure guano is too evanescent in its effect. The surface should be thoroughly smoothed and pulverized, after which it is ready for seeding or setting the turf.

The best lawns here are of blue grass and white clover; the latter succeeds finely if sown in October or November. Blue grass by itself makes very little show from the seed the first season after sowing, but by the addition of white clover, which is desirable in every case, a pleasant effect is produced much earlier. Blue grass is best propagated by dividing the natural turf in the fall, and either setting it out carefully in lines eight inches each way, or cutting up the turf into fragments as finely as possible, and scattering the same broadcast over the prepared ground, and then following with a roller or turf beater, to set these fragments firmly in the soil; at the same time white clover should be sown to thicken up the turf at the bottom. All coarse weeds of every description, as they appear, should be removed, and crab grass kept down, if it appears, by frequent mowing. Where but a small grass plot is to be set, and enough good turf can be obtained, it is better to procure it and turf the whole over nicely, and roll or beat well. Grass seed should be sown just so soon as there are evidences of growth commencing in the spring, or six or eight weeks before the setting in of winter. The above grasses succeed well from Canada to below this point. Where they prove unsatisfactory from the greater heat Bermuda is the best substitute.

(TO BE CONTINUED.)

The *Germantown Telegraph* says that the common blue pill of the apothecaries cures the chicken cholera in Pennsylvania. Give each chicken when seized with the disease a two-grain blue pill, and if not out of danger by the following morning, another—two pills almost universally effecting a cure.

An English writer thinks that American early potatoes must soon come to an end, because as each new variety is said to ripen ten days earlier than any other, the time between planting and digging will soon be exhausted.

From the official accounts of the railroads at Chattanooga, it appears that 81,000 negroes have passed through that place on their way to Mississippi, Texas and Louisiana.

The State of California has 800,000 peach trees, enough to produce more than 100 pounds of fruit annually for every person in the State.

Texas has more than 8,000,000 head of cattle, and annually exports 1,000,000 beeves.



The Apiary.

Those who are engaged in Bee culture, whether on a large or small scale, if they desire to save themselves annoyance and loss, would do well to guard their bee hives against the inroads of the moth worm. They can be found now on the bottom boards of the hives in the morning, and should be destroyed mercilessly.

In this climate, swarming is generally over, but to those whose stocks have not already swarmed, we recommend them to have their hives ready. If a nice hive is at hand when the bees swarm there is little or no difficulty in getting them into it, but if the hive has to be made or "hunted up" when the swarm takes place, is very likely to lose his bees.

Mr. Quinby, one of the great authorities on "Bee culture," says, in a recent number of the *American Agriculturist*:

Swarms coming just before a wet, cold spell, should be fed. Have a care that light hives do not suffer for want of honey. Swarming in general is not to be expected before the white clover blossoms. Before swarming, the bees build cells for queens, to make sure the succession after the old one has left. These cells may be seen by examining the edges of the combs in a box hive or by taking out the movable frames, where these are used. When these cells begin to be sealed, look out for the swarm at once. Swarms usually issue between the hours of ten and three, but this is more the case with the natives than with the Italians. The latter will issue sometimes earlier or later. They take as much honey with them as they can carry, and usually settle on some tree or bush not far from the hive, where they may stay 24 hours, and possibly, not one. If they start for the woods, scatter water or dirt among them. This throws them into confusion, and sometimes will stop them. Those who believe in rattling pans and blowing horns on such occasions, may use them, but for myself, I lack faith. Paint no hives now, but let them be clean and cool. It matters little how the bees are put into them—may be jarred, dipped, or brushed, but brushing is apt to irritate them. Sometimes the branch on which they are can be cut off, laid on a sheet, and the hive set over it. When the bees are in, shade the hive. This is of the very first importance. All hives should be kept from the sun

in some way. When clover begins to bloom freely, put on as many surplus boxes as the bees will occupy.

Remarkable Evidence of the Instincts of Bees.

In a recent conversation with some friend of the subject of Bee culture, we were told the following interesting and curious story of the instinct of bees, which, we think well worth of publication, although advocates of a monarchical government may use it in urging the superiority of their system over other forms of government.

Mr. Wm. Talmage, a highly respectable and worthy citizen of Athens, Ga., who cultivates bees on a small scale, in the garden adjoining his residence, observed that a swarm from one of his hives, was very much agitated, refused to settle, indicated distress by a peculiar buzzing, and after some time flew away to a distance. While trying to discover the cause of their disturbance he accidentally discovered the Queen bee entangled in some grass and weeds in his garden and only attended by a few of her subjects. He relieved her from her critical position and put her under an inverted tumbler on a table in the garden. The faithful lieges who had remained with her, continued to buzz around her for a little while, and then some of them flew away in the same direction which the swarm had taken. After a short time the whole swarm returned, rallied round their Queen, peace and happiness were restored, and the swarm easily and comfortably hived.

Those who know Mr. Talmage as well as we do, know that he is incapable of an exaggeration, and that any statement of his is worthy of implicit credence. It is clear, therefore, that the disturbance and distress of the swarm were caused by the loss of their Queen, and that after she was saved, some of the bees who had remained with her, communicated the joyful tidings and her whereabouts to their companions, who immediately returned and restored their government.

From the Illustrated Bee Journal. Bee Pasturage.

This important subject is of great moment to the general bee-keeper. In every location it is a great desideratum of success to profitable bee culture; and every apiarist who is engaged in this vocation, either upon a large or small scale, should obtain this pasturage in its natural or artificial production. None can deny its utility. In the *American Bee Journal*, (vol. 3, p. 151,) this subject is noticed by Giles B. Avery, in his article on the value of Alsike Clover

If we gain but half what Mr. Avery claims from an appropriate amount of bee-pasturage, our gain will be immense, if adopted by the bee-keeping public. He says: "We give it as our opinion that, if every farmer would put half of the land now seeded to grass, into Alsike Clover, bees might be very profitably multiplied in our country, an hundred fold, and each hive furnish many times its present profit, and quite as many cattle sustained by the arrangement as at the present time." It is therefore, evident that if we make the right disposition of our crops, we can both benefit our bees and other stock at the same time; and it is further evident that it is our duty to do so, or suffer the loss of the bees we have on hand.

Mr. Mangrove, in the same Journal, vol. 3, p. 168, says: "In view of the fact that bee pasturage differs very much in different sections of country, and that it is desirable to furnish supplies for the bees at all times during the working season, or from spring to fall, bee-keepers should, on all occasions, encourage the introduction and cultivation of honey-yielding plants and forage crops." Seasons like that of 1868, particularly demand attention to Mr. Mangrove's suggestion, since "from the beginning of July onward, pasturage rapidly diminished, and the want of rain, with drouth, soon constrained the bees to resort to their winter stores for support." This, of course, would *instinctively lead them to cease rearing brood* in sufficient numbers to supply the loss of population continually going on during the working season, by death or otherwise. And hence, the cold season coming on finds the colony *too weak to generate animal heat* sufficient to keep them for several months longer, if the proper weather could be kept up. Thus it seems that an *insufficient amount of pasturage* at a certain season of the year, is the *cause of this failure*. Shall we suffer it again without an effort to save our bees and make them profitable, by sowing every year honey-producing crops.

In the *Canadian Bee Keeper's Guide*, Mr. J. H. Thomas says, on page 66: "The prosperity of bees in every locality, much depends upon the *amount* of bee pasturage. In some localities it is abundant from early spring until late in the fall—nature having lavishly bestowed these her wild flowers. In other localities it is quite different. The section of country where I reside does not abound with wild flowers; and in the fall, especially, the bee pasturage is quite limited. This difficulty may be easily obviated, by the more extensive sowing of buckwheat, and the introduction of the Swedish white clover (the Alsike)." This gives the evidence and experience of friend Thomas, on the question of bee pasturage, and it is worthy of our careful attention.

Mr. Harbison, in his work on *bees and bee keeping*, says: "It is of the utmost importance for the success of an apiary that it be in a locality where bees can readily find an abundant supply of good pasturage. The success of bee-keeping depends greatly on this. As well might a stock grower expect to make his cattle profitable without supplying them properly with food, as to suppose bees will live, thrive, and be of

benefit to their owners, without obtaining constant supplies of pollen and honey, in some way, from spring to fall, with but little, if any, intermission."

No person can fail to see that Harbison's evidence coincides, in every respect, with the preceding—showing conclusively that we *must* supply this pasturage or lose our bees, gaining no reward for having owned them; but, on the contrary, loss of time and money.

I next turn to K. P. Kidder's *Secrets of Bee Keeping*, p. 56. He says: "Connected with the cultivation of bees, it is essential that we understand the true conditions that most favor its prosperity. That these may be known, and in a degree perfected by the hand of man, we are quite certain. It is known that the only food of bees is the nectar and pollen of the flowers, and that different varieties produce these deposits in a greater or less abundance. Then, if we would prosper in our endeavor to multiply the species with success, we must cultivate those plants and trees, (when nature does not spontaneously produce them,) that will yield these flowers longest and secrete the greatest amount of saccharine matter within the reach of the bee." And he further says while speaking of Alsike clover: "This perennial plant, which is being cultivated to some extent in different parts of the country, is considered valuable for cattle, sheep and horses, and makes excellent bee pasturage." In the *Bee Keepers' Guide Book*, E. Kretschmer, says: "Able writers are constantly encouraging the cultivation of bees, and we must join them in their effort." Relating to the Alsike clover he says: "Yet its greatest advantage for bee pasturage is an equally valuable one, and no bee-keeper should hesitate to obtain a package of seed."

Quinby says: "A honey-producing country may be like a grazing region. One field may pasture ten times as many cattle as another; and the same difference may be true of pasturage for bees." And speaking of the clover, buckwheat and basswood sources of honey, he says: "Where all these are abundant, there is the true El Dorado of the apiarist."

In the *American Agriculturist* for 1868, p. 18, we have the following from one of the Bidwell brothers. He says: "We found only six apiaries where natural forage was abundant throughout the season, and this was in small apiaries in isolated districts. Adjacent to thirty-two apiaries flowers were sown to cover the deficiencies, and these were by far the most successful apiaries we visited, making double the surplus honey, compared with the others taken as a whole. Were this branch of bee culture properly understood, the yield of surplus honey might be increased several hundred fold."

"And in unfavorable years," Dr. Blumhof says, "he, (the bee keeper,) may have the mortification of seeing the bees perish with hunger, unless he considerably and seasonably makes provision for their wants." Langstroth says: "Doubtless in these districts where honey is so largely produced, great attention is paid to the cultivation of crops which, while in themselves profitable, afford abundant pasturage for bees."

Examining the above questions and quotations

attentively we find the prevailing sentiment of the best apiarists is, that we *must cultivate pasturage* for bees, if we would make bee-keeping a profitable business, and avoid some of the "common failures" now so often found, extending over such a wide range of country. The best crops for bees should be cultivated, yielding both honey and pollen. And it will be good policy to cultivate these crops which would also be serviceable for grain and pasturage, or hay for stock, since that would be an important consideration for all concerned, and a great gain.

Improvement and success in the right direction should be our motto.

Household Department.

For the Southern Farm and Home.

Domestic Receipts.

BY MRS. WM. N. WHITE.

ROAST LEG OF MUTTON.—Make a dressing with light-bread crumbs, salt, pepper, a little nicely chopped suet, and the yolk of an egg, stuff the leg of mutton, and when about half done, cut off some of the fat parts in little bits, and put them into a pan of oyster liquor, to which add half pint of water, stir until the gravy is reduced to half the quantity. Put in a little butter rolled in flour, and pour the whole over the meat.

STEWED VEAL AND PEAS.—Take small bits of veal, and stew two hours with a little onion, if to the taste, pepper and salt, with sufficient water to cover it; then add two quarts of green peas, and stew half an hour longer, thicken the gravy with butter and flour.

FRICASEED VEAL.—Take two pounds of veal, cut it into small slices; dissolve a couple of ounces of butter in a stewpan and just as it begins to boil, lay in the veal, and shake it over the fire until it is quite firm on both sides; but do not allow it to brown. Stir in a tablespoonful of flour, and when it is well mixed with the cutlets, pour gradually to them, stirring the pan often, sufficient boiling veal gravy to almost cover them. Stew them gently from fifty to sixty minutes, or longer, should they not be perfectly tender. Add salt, pepper, and other flavorings to the taste, also a pint of rich cream and three egg yolks. Serve with peas, and new Irish potatoes.

HONEYCOMB GINGERBREAD.—Half a pound of flour, half pound of moist sugar, quarter of a pound of butter, quarter of a pound of good syrup, half teaspoonful of soda, with ginger and lemon to the taste. Bake in a moderate oven till a light brown.

CURRENT CAKE.—One cup of butter, two cups of sugar, three eggs, one cup of milk, half teaspoonful of soda, nutmeg, and one cup of currants.

CHOCOLATE DROPS.—One cup of milk, two cups of molasses, one cup of sugar, one and a half cakes of chocolate, and butter the size of a hen's egg. Grate the chocolate and stir it into the milk when boiling, then stir in gradually the other ingredients. Try it, as you would molasses candy, and when properly boiled spread it out in pans to cool, cutting it up in pieces half an inch square. This is considered a very delicious kind of French candy.

TO CLEAN PAINT.—Take common whiting, wet it with warm water till it forms into a paste, dip the flannel in and rub the paint quite briskly, and wash off with cold water. White sifted ashes are also used in the same way. Grease and other spots on paint will, in this way, be almost instantly removed; but care must be taken to wash it off at once, as if allowed to remain on long it will injure the paint.

CLEANING CELLARS.—As this is the season for cleaning cellars, yards, etc., it may not be out of place to remind our people that the noxious vapors which arise can be destroyed by sprinkling the cellars with copperas water, made by dissolving one pound of copperas in a bucket of warm water.

PULVERIZED BORAX.—Is an invaluable article for ladies toilette. It is an excellent dentifrice, it removes all stains from the hands, it cleanses the hair from dandruff, and is particularly good for washing muslins and laces.

TO BOTTLE CHERRIES.—Take the common sour cherry, stone them, and fill any bottles that you may have. Set them into warm water on the stove, and gradually increase the heat until the air is expelled from the bottles. It will be necessary to have some reserved cherries to fill the bottles as they shrink very much, and there must be no space between the fruit and the cork. Put in the corks while in the water, and seal them immediately after they are taken out. Stoning the cherries is quite a tedious task, but the rest of the work can be done very rapidly. A dozen bottles can be filled and sealed in two hours. In this way you can have cherry pies and puddings all winter. There is no fruit that keeps better than cherries, and when prepared in this way, they are much better when stewed with half pound of sugar to one of fruit than the richest preserves. All of the small fruits can be put up in this way, but not so successfully, as when a small portion of sugar is

added, say from a third to a half pound to a pound of fruit.

DYING CHERRIES.—The pits should be taken out, and they should be dried slowly. They are very nice dried without sugar. Currants should be freed from the stems, and dried as you do cherries. Blackberries are much nicer prepared with sugar, and do not need to be dried very hard. Raspberries and Whortleberries need no sugar, and we find them excellent for puddings. Cherries are very nice spiced, using the receipt for "spiced strawberries" in back number of the "FARM AND HOME."

CIDER PUDDING.—Two pounds of flour, two teacups of suet chopped fine, a cupful of raisins or currants, mix well with cider until it is a stiff batter. Boil two hours. This will be found nearly equal to plum pudding

Books, Pictures and Organs. Given Away.

As a reward to those who take the trouble to get up clubs of subscribers to the FARM AND HOME in their neighborhoods, and as an encouragement to others to engage in the enterprise, the Publishers have agreed to offer the following liberal premiums:

OUR PREMIUM LIST.

To any person sending us Three Subscribers and Six Dollars, we will send any one of Bulwer's and Scott's or Dickens' Novels, or any other book in our Catalogue, worth \$1 50.

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Our Catalogue includes all the best Standard Books, Agricultural, Historical, Miscellaneous and Juvenile, Bibles, Hymn and Prayer Books, in all styles of binding, Photograph Albums, etc., etc. This Catalogue will be sent, postage free, on application to the Publishers.

TO CORRESPONDENTS.—All communications and articles intended for publication in the FARM AND HOME, as well as all inquiries to be answered in these columns, should be addressed to WILLIAM M. BROWNE, Editor FARM AND HOME, Macon, Ga., so as to reach him as nearly as possible on the first of every month.

Letters enclosing money for subscriptions and advertisements or relating to business matters, should be addressed to J. W. BURKE & Co., Publishers, Macon, Ga.

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All advertisements should be received here by the 15th of the month previous to that in which they are expected to appear, in order to insure their insertion.

Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are enough liberal.

IT IS OUR PURPOSE, in future, to issue the FARM AND HOME on the 1st instead of the 15th of each month, believing that the change will be more satisfactory to our subscribers than the arrangement which has hitherto existed.

The Southern Farm and Home.

MACON, GA., JUNE, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - - Editor

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WE OFFER our thanks to the Comptroller General, Major Madison Bell, for a copy of his report of the financial condition of the State for 1869.

It shows the gratifying fact that the credit of Georgia is as good as that of any other State in or out of the Union, and that she is in a perfectly solvent condition.

Considering the burdens she has had to bear and the reckless extravagance and waste which have characterized the conduct of her rulers, we have reason to be thankful for Major Bell's exhibit.

WE ARE under obligations to our esteemed friend and former comrade, Colonel William Preston Johnston, for a copy of the Catalogue for the session of 1869-'70, of Washington College, Lexington, Va., of which General R. E. LEE is President.

It affords us sincere pleasure to see that this institution is so prosperous. There are now present, 841 undergraduates, of whom 26 are from Georgia.

THE MILLEDGEVILLE HOTEL.—Attention is requested to the advertisement of the Milledgeville Hotel, S. and R. A. McComb, Proprietors. We confidently recommend all travelers having occasion to go to Milledgeville to patronize this house. Its genial and attentive hosts, obliging and capable attendants, excellent fare, and commodious apartments, render it one of the best hotels in the State. Having had occasion to visit it frequently we state what we know.

WE PARTICULARLY invite the attention of our readers to the able and instructive article in another part of this number, from the pen of Professor W. LEROY BROWN.

He who reads the "facts" therein set forth, and still doubts as to the efficacy of deep plowing

and pulverization of the soil in preparing it for the seed, must be deaf to the voice of reason and unable to comprehend the evidence of his senses.

Professor Brown has presented in the article to which we refer, the most conclusive arguments we have seen in favor of the general use of the subsoil plow.

Remedy for Nut Grass.

Hitherto we have been of the opinion that the remedy against nut-grass, offered by an Augustan man at the low price of twenty-five cents—"move away from the land,"—was the only effectual relief from this pestiferous growth. We now learn, (see advertisement) that J. M. Kenny of Athens, Ga., has discovered an infallible mode of extirpating it, which he proposes to communicate to persons who pledge themselves to keep the secret, for five dollars to individuals or to clubs of five for twenty dollars. As we know nothing of Mr. Kenny's secret, we must wait for the experience of some of those who may be induced to test its efficacy, to be able to state whether or not his faith in his remedy is well or ill founded.

THE GEORGIA RAILROAD.—The Annual Convention of the Stockholders of the Georgia Railroad took place at Augusta, on the 9th, 10th and 11th ult.

The reports of the President, Hon. John P. King, and of the Superintendent, Col. E. W. Cole, present a most satisfactory view of the prosperity of this important railroad. They show that the net earnings of the road, after paying all expenses, during the past year, have been \$349,104.00, and that the profits of the Company from all sources, have been \$1,456,183.84. The following directors were elected:

John P. King, President; E. Jones, John Bones, E. R. Ware, Samuel Barnett, Antoine Poullain, James W. Davies, L. M. Hill, Richard Peters, Stevens Thomas, James S. Hamilton, George T. Jackson, M. P. Stovall, Thomas J. Burney, D. E. Butler and Josiah Sibley, were re-elected, and Major George Hillyer, was elected to fill the vacancy caused by the death of Judge B. H. Warren.

Col. E. W. Cole and S. K. Johnson, Esqrs., were unanimously re-elected General Superintendents and Superintendent of the road for the ensuing year. The Company could not find more faithful and efficient officers, nor persons who possess in a higher degree the confidence and respect of the public than these two gentlemen.

Fennel in Clover.

A much esteemed friend and subscriber, who seeded a patch last fall with clover, and has an excellent stand of clover, but finds it full of fennel, asks us how to extirpate the fennel. We know of no better way than to cut the fennel before it seeds, and as it is a biennial it will die out after the second year. It would be better still to pull it up by the roots, if in doing so the clover could be left uninjured.

The cause of this pest which troubles our friend and others so much, is the dishonesty of seedsmen who mix fennel with the clover seed which they sell at immense prices, thus doubly defrauding their customers, first, by not giving them the good thing which they want and for which they pay an exorbitant price, and second, by giving them a very bad thing which they do not want, and which costs much time and money to extirpate.

If our friend would publish the name of the seedsmen who sold him fennel for clover seed, he might protect future clover growers against the trouble from which he now suffers.

THE FLORAL EXHIBITION AT AUGUSTA.—It was not our good fortune to be present at the Floral exhibition which took place at Augusta on the 10th ult., under the auspices of the Cotton States Mechanics' and Agricultural Fair Association at their new Fair grounds. We learn from those who were present that it was a complete success, both in the magnificence of the display of flowers and fruits, and in the large number of persons who were present. The arrangements, decoration of the rooms, and disposition of the articles exhibited, were, we learn, admirably executed, affording the best assurance that the enterprise, skill and liberality with which the Cotton States Mechanics' and Agricultural Fair Association is managed, will ensure the triumphant success of their Fair in October next.

The addresses of the Rev. C. Wallace Howard, and of Dr. W. H. Tutt, are universally applauded for their eloquence, practical wisdom and useful instruction, recommending to the people of the South, a diversified industry as essential to material prosperity.

CAROLINA LIFE INSURANCE COMPANY, of which the Hon. JEFFERSON DAVIS is President, has complied with the requirement of the law of Georgia, by depositing \$20,000 in Georgia bonds with the Comptroller General, and is now authorized to issue policies in the State. The assets of the Company, according to the sworn

statement of its condition on the 1st of April were \$826,019.03. It issued its first policy on the 11th of July, 1867, with a capital stock paid up of \$200,000.

The name of our honored and beloved ex-President, is in itself sufficient guarantee of its solvency, and the integrity of its management. [See advertisement.]

MR. GUSTIN'S LETTER.—The attention of our readers is requested to the letter of our respected fellow citizen, Samuel I. Gustin, Esqr., published in another column, presenting his views on the after culture of summer crops, and recommending deep, instead of surface plowing, as most conducive to healthy and productive growth.

Mr. Gustin's theory is opposed to that which Mr. David Dickson has practiced. Who will decide when doctors disagree? We can only say that Mr. Gustin is an accomplished, scientific agriculturist, who has made trees and plants the study of his life; that he is firmly convinced of the truth of what he states, and that his sole motive in writing is to do good to his fellow citizens. In the winsome language of a "recent exchange," we wish some of our subscribers would test Mr. Gustin's system of culture by experiment and publish the result in the fall.

LECTURES ON AGRICULTURE.—The Secretary, University of Georgia, announces a course of agricultural lectures, by the Terrell Professor of Agriculture, beginning June 1st, and open to the public. We take pleasure in calling attention to these lectures, and we recommend all interested in agriculture to attend them. See advertisement.

CORRESPONDENCE.

Land Measurement.

Editor Farm and Home:—Believing that the following table will be useful to many farmers in aiding them to form some correct estimate of Land in cultivation, I forward for publication:

5 yards wide by 968 yards long contains 1 acre.
10 yards wide by 484 yards long contains 1 acre.
20 yards wide by 242 yards long contains 1 acre.
40 yards wide by 121 yards long contains 1 acre.
80 yards wide by 60½ yards long contains 1 acre.
70 yards wide by 69½ yards long contains 1 acre.
60 feet wide by 726 yards long contains 1 acre.

110 feet wide by 369 yards long contains 1 acre.

120 feet wide by 363 yards long contains 1 acre.

220 feet wide by 198 yards long contains 1 acre.

240 feet wide by 181½ yards long contains 1 acre.

440 feet wide by 99 yards long contains 1 acre.

F. M.

Greene County, Ga.

WORMS IN HORSES.—I give you a simple, but a sure remedy for pin worms in horses, which are very troublesome to the horse. Inject about one pint of Kerosene oil in the rectum, and it will surely destroy them.

F. M.

Answers to Correspondents of Farm and Home

A Subscriber at Fort Valley asks us to give him "the quickest and best way to remove splints and wind galls from horses."

SPLINTS.—It depends upon the size and condition of the splint how it should be treated. If there is no lameness, it is better to use no remedy, for the splint will disappear in a year or two by absorption. If however, the horse is lame, from the pressure of the splint on the back, sinew or suspensory ligament, there are two modes of cure. 1st. Open the skin an inch below the splint with a narrow curved knife, shaped like a probe. Push it upwards towards the excrescence, the flat side towards the skin, make several scarifications of the covering of the splint, then withdraw the knife and introduce a fine seton needle, drawing it out above the splint, and covering the thread or tape with a bandage.

In ten or twelve days the thread may be withdrawn and a cure will generally be effected. The horse must be thrown to perform this operation. 2d. Cut the hair short immediately near the splint, and rub in every night until a free watery discharge is produced from the surface, a blister composed as follows:

Biniodide of Mercury.....1 drachm
Lard.....1 ounce

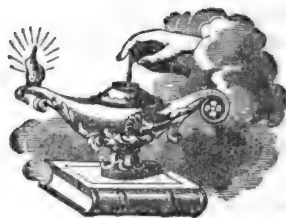
Bathe the part affected every morning and night with very hot water, and continue to do so for several days after the application of the blister has been discontinued. Generally in one week the splint will begin to disappear with the treatment.

Where the bony excrescence is so extensive as to defy scarification and blister, there is no remedy but *string*, followed by repeated blister.

WINDGALLS.—Pressure by bandages, and the application of cold lotions will reduce windgalls. Rest and blistering will remove them entirely,

but when the horse is worked again, they will probably return. There is no radical cure for windgalls, but scarification under the skin, the consequences of which often prove to be worse than the disease.

Literary Department.



EDITOR'S BOOK TABLE.

It too often happens that books written to serve a purely moral object are intolerably prosy and tedious. The purpose is good and laudable, but it is the way of serving it which is wearying by its dullness. *Self-Help, with Illustrations of Character, Conduct and Perseverance*, by Samuel Smiles, (Harper & Brothers,) is a delightful exception to this almost general rule. It inculcates the most wholesome and instructive morality in the most agreeable manner, and in the most attractive style, illustrating the best precepts by the best examples, affording profit and pleasure to the reader in the happiest combination. It is an admirable work which has already deservedly attained a wide circulation in Europe.

We wish that all those in our country who are "ashamed to work," who spend their time whittling sticks at country stores, or shooting robins, who rail at fortune because they are poor, and never make the least effort to help themselves, would read, mark, learn, and inwardly digest every line of "Self-Help."

The Horse in the Stable and the Field, by J. H. Walsh, (Stonehenge) Robert McClure, M. D., and Ellwood Harvey, M. D., (Porter & Coates, Philadelphia,) is the most valuable book we have seen on the management of the Horse and the treatment of the diseases to which he is liable.

It describes plainly, (though written by a Fellow of the Royal College of Surgeons, a Veterinary Surgeon and a doctor of medicine) and fully the Natural History, Physiology and Pathology of the noblest of all the domestic animals. Every farmer and horse owner can understand every word of this book, and readily apply its

teachings. We have long needed just such a work, containing the views and experience of the most eminent veterinary practitioners conveyed in an intelligible manner, and offer our thanks to Messrs. Porter & Coates for having fully supplied the deficiency.

We are indebted to the same publishers for a copy of Dr. McClure's *American Gentleman's Stable Guide*, containing valuable information and instruction as to the construction of stables, the care of horses in sickness and in health, and the description of carriages, harness, and how to take care of them. This too, is a most valuable little book, which we can confidently recommend to all those for whose benefit it was written.

Hand books of decorum, etiquette, manners, etc., of all literary productions—if indeed they deserve the name—are in our opinion, the stalest, flattest, and most unprofitable reading. No book that ever has been, or ever will be written, can make a gentleman or a lady, even though the quintessence of gentility should undertake the work. But ordinarily, the hand-books of etiquette are written by those who know least about the courtesies, manners and habits of polite life, and consequently their lessons are as grotesquely untrue as they are valueless, except to mislead. The *Bazar Book of Decorum*, (Harper & Brothers), is the least objectionable book of its kind of which we have any knowledge. Its object is not merely to instruct its student that clean hands and clean linen are requisite in polite society, that spitting upon a carpet or blowing the nose with the fingers are objectionable indulgences, and that putting one's feet on the table or mantle piece may be a convenient and easy position, but one which politeness forbids. It does this, however, but in the least offensive manner. The chapters on the "Superfinery of Dress," "American Ease," and "American Titles," are very readable, and their sarcasm not unjust for the latitude in which they were written.

The American Chess Player's Hand-Book, (Porter & Coates, Phila.) is designed to teach beginners the rudiments of the "noble game of chess." It is simply and intelligibly written, affords the student a clear insight into the meaning and relative distinctions of the "openings," and illustrates its lessons by introducing the games of the most distinguished chess-players, such as Philidor, Morphy, Andersen, Paulsen, Harwitz, Staunton, etc. It is a very valuable manual for a beginner.

Debenham's Vow. A Novel, by Amelia Ed-

wards, (Harper & Brothers), is one of the most enjoyable novels of the year. There are parts of it written with considerable power, far beyond that of most novel writers, and there are some scenes remarkably spirited and interesting. The plot is ingenious, though not unfrequently defective, and especially is this the case towards the close of the story. But the defects are forgotten or forgiven in the deep interest which the story creates. Temple Debenham, the hero, is a poor, forlorn offshoot of an ancient family who commences life as the organist of an out-of-the-way church in London. He falls in love with the daughter of an artist, as beautiful as she was good. Finding from his mother that he is the descendant of the De Benhams, who once owned large landed estates, he "vows a vow" to regain possession of them and restore the family glory. He abandons his betrothed, devotes himself to money-getting, runs the blockade to Charleston during our war, amasses £60,000, marries the rich daughter of a London merchant, buys back the Debenham lands, and fulfils his vow. He falls ill, recognizes the unsatisfactory nature of mere wealth, and repents his ill treatment of the girl he promised to marry, but seems to get along very comfortably on the whole, as the Lord of the De Benham manors.

Harper & Brothers have sent us a copy of their new edition of *Tom Brown's School Days*. Though we had read it more than once before with all the interest a Rugbyian must feel in so graphic a description of school life at Rugby, in the time of that greatest of teachers and best of men, Dr. Arnold, we could not resist the temptation to read it again, and found ourselves enjoying the match of Football, the fight between Tom Brown and the Slogger, waiting for roast potatoes in Sally Harrowell's kitchen, and Tom's visit to Authur after the fever, quite as much as when we first read them. It is an inimitable book for boys, and its charms are considerably enhanced by a number of spirited illustrations.

The Hand-book of the Sulphur-cure as applicable to the Vine Disease in America, by William Flagg, (Harper & Brothers) is a compact and extremely valuable treatise in which the use of sulphur as a remedy for mildew in grape vines is recommended, and its application explained. Although the recommendation is not original with Mr. Flagg, his book contains many useful, practical hints as to the mode of using sulphur on vines, and many good authorities agree with Mr. F. as to its preventive property against the effects of mildew.

Reminiscences of an Old Georgia Lawyer, by Hon. Garnett Andrews; (J. J. Toon, Atlanta). We are under many obligations to the venerable and distinguished author, for a copy of this entertaining volume, replete with humorous anecdotes, amusing incidents, and agreeable sketches of many of the leading lawyers of Georgia, in the good old times.

Judge Andrews proposes to make a collection for future publication of anecdotes, illustrative of the wit and humor of the legal profession, and invites contributions to the stock of material in addition to that which his own memory furnishes.

James H. Gregory, the noted horticulturist and seedsman, of Marblehead, Mass., has our thanks for a copy of his eminently practical treatise on *Cabbages, and How to Grow Them*. It is a really valuable little pamphlet.

Beyond all comparison, Mark Twain's last work *The Innocents Abroad*, (the American Publishing Company), for a copy of which we are indebted to Dr. T. J. Crowe, is the best and most enjoyable book he has ever written. As a mere guide book for foreign travel, in the lands which he visited it is critically accurate. Its notices of the places which he visited, the sights which he saw, and the people he saw, are more instructive, and convey a better idea of men and things in Europe and the East, than any of the many hand-books extant; while the original humor of the narrative, the vivid description of remarkable scenes, inimitable stories of the amusing and ridiculous incidents of travel, and the refined appreciation of the beautiful, sublime, sacred, remarkable places and things which he saw, give a varied charm to this book, which we cannot too highly commend.

Those who take up this book, supposing it to contain nothing but "Mark Twain's fun," or a mere burlesque description of his excursion, will be disappointed. They will find wit and humor, and much to amuse, but they will also find an abundance of matter to instruct and improve the mind and move the heart—much that is pathetic, as well as much that is laughable, a happy and pleasing combination of grave, gay, lively and severe.

The work can be obtained from the Agent, in Macon, Dr. T. J. Crowe, or at the bookstore of J. W. Burke & Co.

We have received the first number of the *Southern Agriculturist*, "devoted to the Farm, Garden, Manufactures, Orchard, Stock Yard, and the Mechanic Arts," published monthly, at

Louisville, Ky., by Thomas J. Key, at \$2 per annum.

It is a handsome periodical, containing much valuable matter, both original and selected, and deserves, and we hope, will receive liberal patronage. We cordially welcome it among our exchanges.

We are glad to find on our table, the "*Southern Cultivator Receipt Book*," a compilation of about 400 Recipes, which have been published within the last few years in the *Southern Cultivator*. They are now republished in pamphlet form, and we recommend the little work to our readers. Address C. D. Camp, Book-Keeper, "So. Cultivator," Athens, Ga. Price 50 cents.

Among the "Magazines received," we would especially notice the *Home Monthly*, A. B. Stark, Editor, Nashville. The May Number contains an able sketch of the Rev. Wm. Elbert Munsey, and the Rev. Wm. Morley Punahon, the eloquent and learned preachers of the Methodist Church, in which the wonderful powers of these wonderfully gifted men are graphically contrasted. The paper on "the Public schools and the Bible Question" will well repay perusal. The review of Vashti is more partial than discriminating, more ingenuous than candid. The writer of the review properly styles his article "a defence of this book," (Vashti). He evidently "meant well." But we fear that the author of *Vashti* will have more cause for defence against such indiscreet defenders, than against all the "bosses of public opinion" against which the reviewer has boldly resolved to "rush."

The *Home Monthly* is a Southern Magazine and well merits Southern patronage. Terms \$8 per annum.

PERIODICALS AND CATALOGUES.

We are indebted to the publishers for the following:

Farmer's Dollar Magazine, by Thos. M. Hughes, Ridgeway, N. C. Terms \$1 a year.

Hovey & Co.'s, (Boston), *Illustrated Guide to the Flower and Vegetable Garden*.

Tilton's (Boston) *Journal of Horticulture*. Terms \$8 a year.

The Temperance Watchman, by W. E. H. Searcy, Griffin, Ga. Terms \$8 a year.

Ellwanger & Barry's (Rochester, N. Y.), *Catalogues of Ornamental Trees, Fruits, Green House and Hot-House Plants, etc.*, and their *Wholesale Catalogues of the Mount Hope Nurseries*.

Ferre, Batchelder & Co.'s, (Springfield, Mass.) *Illustrated Catalogue of Seeds*.

VOL. I. No. 9.

THE
SOUTHERN

FARM AND HOME



JULY, 1870.
W. M. BROWNE, Editor.

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* * * THE POSTAGE on the FARM AND HOME is 3 cents a quarter; 12 cents a year.

 For Club Arrangements and Opinions of the Press—See Third Page of Cover.



THE LATE CHARLES DICKENS.

SOUTHERN FARM AND HOME:

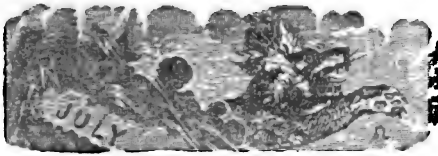
A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., JULY, 1870.

No. 9.



FARM WORK FOR THE MONTH.

Hints on all those subjects which relate to crop-making are speedily drawing to a close. The time for laying-by is approaching, and while it will be found that the largest measure of success will reward those who have been most diligent and thorough in the culture of their land, human labor will soon have done all it can do for the crops, and we must now depend on a benign Providence for the rest.

Although we must know and feel that without the blessing of Him who sends the seedtime and the harvest, our best efforts must come to naught, yet it too often happens that our failure to raise abundant crops is impiously attributed to unpropitious seasons, when if the truth were told, it should be attributed to our own neglect to cultivate the soil at the right time and in the right way, and to our attempt to cultivate a wider area than we can cultivate well.

But it is now too late for preaching. Wherever we have been guilty of the above sins of omission or commission, there is now no time to apply a remedy.

COTTON.

The hoes should still be industriously plied removing all grass and weeds in the rows, and the sweeps should repeatedly pass over the middles, destroying all interloping vegetation, and keeping the soil clean and mellow. This work cannot be done too lightly. Deep and close plowing now would injure the roots, cause the forms to shed, and retard the formation of bolls. This war on grass should be kept up

unceasingly all through this month, and during a portion of the next, so that the largest possible yield can be obtained, and when the picking season opens that the cotton can be gathered clean. We are satisfied that running the sweeps through the cotton as long as they can pass without injury to the branches, increases the production very considerably, while every one will admit that where the rows are perfectly clean when picking begins, there is little or no "trashy" cotton, and this in itself is no small gain in the increased value of the staple. Perfectly clean cotton generally brings one cent a pound more in the market than the same staple where it has been mixed with trash in the picking.

CORN.

A large portion of this crop will have been laid by before this number of the FARM AND HOME will reach our readers. Where this is not the case, the surface ought to be frequently stirred with sweeps.

FODDER.

Towards the end of this month in many parts of the South it will be time to "pull fodder." Very frequently "fodder pulling time" is supposed to have arrived before it really has come, and in the anxiety to save the fodder, serious damage is done to the corn. Not a blade of fodder should be stripped from the stalk until the corn is properly matured—until the grain has commenced to shrink and harden. It is a serious question whether pulling fodder at any time before it becomes too dry to be worth anything does not injure the corn by causing it to shrink and lose weight, to an extent far exceeding in value the entire worth of the fodder.

To make good fodder it is essential that it be never allowed to get wet by rain after it is pulled. It is better to stack it after a few hours curing in the sun than to leave it exposed to the rain.

to be dried afterwards. Where it has been stacked in a partially cured state it should be opened and aired the first fine day, and when thoroughly cured should be either hauled home and put away in large airy lofts, or put up in double stacks. We strongly recommend that it be hauled home to the barn, as vastly preferable to the stacking in the field and hauling "when we have time" in the fall. We never knew it to fail that fodder hauled to the loft as soon as cured, yielded much more food for stock during the winter, than the same number of stacks left in the field and only brought home in leisure hours, or "as it was wanted." The "critters" which a number of our new-blown citizens have acquired this season, may suffer from our advice, but the owners of the fodder who want to enjoy the full fruits of their labor, will find it largely to their advantage to make their cured fodder stacks on their lofts or within their own stable enclosures.

HAY.

We have been so much and so often disgusted during this spring, at seeing our planting friends sending their teams to the depot to bring home northern and western hay for which they paid, exclusive of hauling, \$2 to \$2.25 per cwt., we are very earnest in our recommendation to save all the crab grass and crow-foot hay that we possibly can. A few days' labor devoted to the cutting and curing of this crop, will save many a dollar now spent for bought hay, will save many a trip to the depot, will gladden the hearts and cover the ribs of many a woe-be-gone mule, horse, ox and cow, who now depend for their "roughage" on the hay imported from the West or from New York, and it will also spare the planter much anxiety of mind and loss of time. The hay should be cut or pulled when it is in bloom. It should not be left until it becomes perfectly dry. After it is cut, it should be left to wilt and then raked into small cocks. After it has been sunned for one or two days, the size of the heaps can be increased, and when it has been well cured, we recommend that it be stored away just as we have advised for fodder. Where the loft room is not sufficient for both hay and fodder, log pens covered with boards, making a steep roof, will be an excellent shelter.

WHEAT AND OATS

Should be threshed, and after the grain has been well exposed to the sun, should be put away in bins or boxes during the heat of the day. Thorough sunning is a sure preventive against weevil.

TURNIPS.

Towards the end of this month every good and provident farmer should give attention to sowing his turnip patch, provided he has previously had it thoroughly broken and pulverized, and liberally enriched. If this work has not been done—if the land designed for turnips is cloddy and poor—let him turn his attention to something else, because poor, lumpy land will not produce turnips.

Ruta Baga or Swedish turnips, which produce immensely—on rich ground as many as 1200 bushels to the acre—should be sown this month. Sow in drills about 26 inches apart, and apply from 300 to 400 lbs. of some good superphosphate per acre, when you sow the seed. Be sure to get reliable seed, and to ensure this, you must purchase from some reliable seedsmen, who is incapable of selling fennel for clover seed. Sow as largely as your preparation will permit. Three or four acres of Ruta Bagas, yielding three or four thousand bushels of roots, will prove a valuable auxiliary to the corn crib, correct partially, the evil consequences of the "all cotton and no corn" practice, and obviate to some extent next spring, the necessity of buying corn from the West at \$1.75 per bushel.

SWEET POTATO

Slips may still be set out. They will make some tubers fit to eat, and will at all events make seed for next year. The sweet potato crop should be well worked, all weeds and grass destroyed and mellow earth thrown upon the rows with a half shovel or a scooter. When the vines are about a foot long run round them as deeply as you can with a turn plow, taking care not to injure the vines, and making the turned soil meet about the stems. Then plow out the middles.

For the Southern Farm and Home.

Cotton Seed as a Fertilizer.

BY DR. E. M. PENDLETON.

In one of my communications to your paper, I promised to say something in reference to cotton seed as a fertilizer. What principle is it that renders it so powerful particularly on corn, wheat and oats, during a seasonable year? We answer unhesitatingly, nitrogen, which being converted into ammonia in the soil, makes it the cheapest and most valuable source of ammonia we have.

The amount of nitrogen in cotton seed will vary somewhat, according to the quality of seed used, the seasonableness of the year when it is grown, and soil on which it grows. Thus

cotton seed grown on good land, with plenty of rain is richer in nitrogen than when grown on poor land of a dry year. Seed from cotton gathered in August and September will average better than the last pickings. Hence, the difference in the analysis of different chemists. As an average we may safely put down 7 per cent. of nitrogen, equal to a little more than 8 per cent. of ammonia. 1500 lbs. of seed cotton will make a good bale of cotton, leaving 1000 lbs. of seed. For every bale of cotton, then, the planter has seed enough left to make 80 lbs. of ammonia. One ton of cotton seed then, is worth as much as a half ton of Peruvian Guano, as a nitrogenous manure, bating the expense of shovelling, hauling and application.

From the best estimate that we can make, cotton seed thrown out at Christmas to take the rains, heat, and rot, loses by the time it is applied to corn, about one half of its ammonia. Heated cotton seed then, is worth, as far as the nitrogen or ammonia is concerned, about as one ton of best Peruvian guano to four of the seed. Experiments with mashed and heated cotton seed have demonstrated this fact, and if the seed is left to rot entirely, it is worth no more than so much dirt. When rain falls upon a heap of cotton seed and heat is produced sufficient to destroy the germ, fermentation takes place instantly, and then decomposition. Some of the nitrogen escapes as such, and some uniting with the escaping hydrogen of the seed forms ammonia, which clings to the water yet remaining in the heap, or as it is lighter than the atmosphere, escapes with the other gaseous elements of the decomposing mass. But every particle of water that is evaporated from the heap by the intense heat, carries off ammonia with it. What an incalculable loss to the cotton planters of the South, all the result of this foolish mode of heating cotton seed like their progenitors did.

But one ton of Peruvian Guano, is worth more than two tons of green cotton seed, or four of heated, because it contains other elements, mainly bone phosphate of lime, which adds to its value. We estimate the ammonia in a ton of Peruvian as worth two thirds its value, the remaining principles, one third. Then, two tons of green cotton seed are equivalent in ammonia to two thirds of a ton of guano, which makes the ton of cotton seed worth \$36, or 50 cents per bushel of 28 lbs., as a nitrogenous fertilizer, or eighteen dollars for every heavy bale ginned. This is no exaggeration. It is substantiated by agricultural chemistry, and by

actual experiments made by the writer, and others.

The planters in this country, then, are exactly in the fix of the fabled *Danaides*, who were doomed by the gods to draw water in buckets with sieve bottoms, which run out about as fast as they drew it up. They buy ammonia from the Chinchaisles, convert it into cotton seed, and instead of putting it in their pockets, as an interest on the money invested, they let \$9 of it escape for every bag of cotton, from their cotton seed heaps, in the form of nitrogen gas. This amount properly husbanded and applied to their crops would save the purchase of thousands of tons of guano throughout the cotton regions. Allowing that half the cotton seed in the country is thus treated, and there would be an annual loss of 20,000 lbs. of ammonia, equal to nine millions of dollars.

The question then comes up pregnant with interest, how can we save it? We answer: by applying the bulk of it to the oat and wheat crop in the fall, or to the corn crop prospectively in February. The first is done by hauling out and scattering from twenty-five to fifty bushels per acre, then sowing the seed, wheat or oats, and plow all in together with a turning shovel. If any one doubts the effect let him come to a poor farm near Sparta, where on worn out land a crop of wheat and oats may be seen equal to rich land, from no other application than the cotton seed. In my opinion the crop will be quadrupled by the application, and after the grain is saved, there will be left nitrogen enough to make a heavy crop of grass and weed for the cotton crop of the next year.

The ammonia may all be saved for corn by opening the furrows with a scooter, followed by a shovel in January or February, and sow the seed in the bottom of the furrow, as thick as may be, and bed upon them with a turning shovel. The cold, wet weather will rot all the seed by planting time, the nitrogen permeates the soil, and every particle is saved. You should plant the corn by the side of this ridge, not on it, but sufficiently near to have the stimulating effect of the manure upon the young plant. Another advantage of this plan is, the crop is not so easily injured by drought, as where a handful of rotted seed is dropped near the corn.

Any farmer may improve his already exhausted soils, and gather a good crop every year, one of cotton and the next of grain, without any other rotation by the purchase of a good nitro-phosphate, to apply to his cotton, and the applica-

tion of the cotton seed to his corn and small grain, as above indicated. Buy guano to make cotton, and cotton seed as a fertilizer for corn, wheat and oats, and to make organic matter for the next cotton crop, and you have all the rotation that is requisite to produce remunerative crops and increase the productive capacity of the soil. An occasional year's rest of the poorer fields will of course add to the fertility of the land, and save the purchase of so much ammonia.

This nitrogen question is becoming a serious one to the tillers of the soil in this section of the country, and it is high time that they understood the fact, that more is annually lost in the South, than is supplied from Peru, and if all was saved that might be, there would be no use of importing it in such heavy cargoes at such exorbitant prices from the Peruvian islands.

Sparta, Ga., May 20.

For the Southern Farm and Home.

Fencing in Live Stock—Something More Important.

BY W. W. TURNER.

It has been suggested that a law be enacted requiring live stock to be kept up, so that fencing for crops may be dispensed with. Whether or not such an act would be expedient, if attended with other necessary legislation, I will not, just here, stop to enquire, but it would certainly be very unwise, without a material alteration in our present law of trespass. Even as it is, with the best and heaviest fences we can make, in some instances staked and ridged, we can scarcely prevent people from walking, riding and hauling through our fields, and as to the unenclosed land, there is almost nothing to prevent the public from making thoroughfares through it, unless damage can be proved in each particular case of passing.

Every farmer knows how much it injures land to haul over it, under any circumstances. The soil soon washes off, leaving only the clay, and that full of gullies. Where land is in the state of original forest, or overgrown with a tough, luxuriant vegetation, like broom sedge, the process of literal ruin is rather more slow, especially in dry weather; but when the wagoning is done during the Winter succeeding a Summer of cultivation the land is rendered worthless in a very short time indeed. Take away the fences from our ploughed fields, and, without a law of trespass similar to that which prevails in some parts of Europe, the amount of damage done our lands in one winter would be astonishing.

The very first time the public road in any particular locality became rough, or sloppy, a new route would be laid out by the passing vehicles, through the adjoining fields. These fields, having been often ploughed, would be easily cut up, easily softened by rain, and with the first wet spell, the new track would be abandoned for another. And so with every successive rainy season during the winter. Under this system, how long would it take to ruin the cultivated lands lying next to public roads? So long as there is a fence around the field, it is to some extent protected, for as our law now stands, "the pulling down or removing any fence, paling," &c., "without the consent of the owner" is an indictable act.

But where there is no enclosure, the premises are at the mercy of the public, for, according to the Code, the mere passing over the land of another is not, of itself, trespass, but damage must be proved in each particular case, or there is no remedy. Now it is difficult to make this proof, unless a crop is growing on the land, and even if it could be made, the amount recovered would generally be smaller than the expense of the suit. So although a proprietor may see people ruining his non-enclosed land, by cutting it up with heavy wagons and carts, he must look on and submit, for our beautiful system of law provides no adequate remedy.

Is not this state of affairs "tolerable and not to be endured"? Independent of the question of fencing in stock, this subject of the law of trespass is a very important one, and is daily becoming more so, especially in the older and more thickly settled portions of our State. The rights of *meum et tuum* seem never to have been sufficiently understood and regarded in Georgia. There has always been an insane popular prejudice against the man who endeavors to protect his property against trespass. It is almost enough to make one curse Democracy in the very bitterness of his soul, and call for an Emperor, or anything else on earth, that will secure him in the enjoyment of his own premises.

The end can be obtained, however, without the interposition of a monarch. There is nothing to hinder the Legislature, even with our present Constitution, from enacting such laws as will secure the desired object. Let it be made trespass in itself to set foot upon the land of another except by his consent—with the necessary exceptions, which I do not now propose to enumerate. Let some kind of punishment be devised, varying from the very slightest to something more serious, according to the circum-

stances of the case. The matter is of vital importance, as every land-holder who has ever undertaken to "enjoy his own," in any way contrary to the prejudices of his neighbors, can testify.

Would that I could engage the whole Press of Georgia, that great power in the State, to take the subject up and agitate it till the Legislature should be compelled by public opinion, as moulded and expressed by the journals of the day, to take decisive steps for securing land-holders in the quiet, peaceable, absolute possession and enjoyment of their property. All our citizens should feel interested in the question, for here, where land is so cheap, scarcely any one is so poor as to be unable to purchase at least a small strip of soil, and by the contemplated legislation, the humble owner of a few acres would be as much a king on his own domain, as well secured in his individual rights, as the proud proprietor of thousands.

"The Best Policy Planters Should Pursue."

We have read within the past six months, several able, well considered and judicious treatises, upon the above subject. Some advise the creation of a great joint stock banking association and steam ship company, in which cotton producers should be the stockholders and their cotton should represent the capital stock at gold value. Others advise the erection of giant cotton manufactories, in which the producers should spin all their own cotton. Others urge the necessity of an immediate importation of Chinese laborers to take the place of the negroes, and enable us to increase our cotton crops at a much reduced cost for labor. Others are strenuously posposed to planters selling to any body one acre of the lands they now own, but advise them to keep all their lands, in the hope that they will yet become very valuable; and others insist that if every land owner were to sell or give away one half of his lands to industrious agricultural immigrants, the other half would speedily become of vastly more value than the whole is worth now.

The authors of these various policies are earnest, thinking men, who are perfectly sincere in their counsels, and are satisfied that they have severally hit upon the "best policy planters should pursue." There is undoubtedly much force in each, and the time will come when many of the ideas which they present will be adopted and reduced to practice. We refer especially to the establishment of a system for the direct exportation of our cotton to Europe,

and of a vast increase of the manufacturing industry of the cotton States. As soon, too, as our social and political condition becomes settled and the rights of self-government are restored, the tide of immigration which now flows northward and westward will be turned South, and foreign skill, muscle, intelligence and money, will be directed to our country, so richly endowed in all that constitutes natural wealth and prosperity. So soon as we have accumulated capital, are out of debt, and can pay as we go, we may establish the bank and steamship line. When we have surplus income, and skilled labor in sufficient numbers to ensure successful operations, we shall certainly manufacture our raw material. We have now every facility, capital and skilled labor alone excepted; and so soon as our political status is fixed, and we know ourselves the nature of our government and laws, and society becomes reorganized upon an enduring and peaceable basis, we can have as many immigrants as we desire.

In the meantime, however, to enable us to recover partially, at least, the ruinous losses resulting from the war, and the state of *quasi* war to which we have been subjected since our soldiers turned their swords into plowshares, there is a policy which planters should pursue, and in our humble judgment, it may properly be called *par excellence*, "the best," because its results are independence, abundance, happiness, credit, and, in time, wealth. With these, banks, steamships, cotton mills, and immigrants will be added to us.

This policy consists in raising our own corn, wheat, rye, oats, barley, peas, hay, stock, and meat. When a planter has for himself, his family, his hands and his stock, an abundance to eat, when he does not need to purchase anything but groceries and clothes, he may depend upon it that he is pursuing a better policy than the planter who raises cotton at a cost of 14c. or 16c. per lb., sells it perhaps at a loss, and buys his corn at \$1.50 per bushel, his hay at \$2 per cwt., his meat at 20c. per lb., his oats at \$1 per bushel, and has no flour but what he buys at the store. Let any man who pursues this policy—who thinks that he can make money by raising cotton which he sells, say at 18c., and by buying all his provisions at the market price—calculate the expenses of making his cotton crop, allow 7 per cent. on his investment in land, mules, implements, etc., and deduct this and what he has paid for corn, meat, hay, etc., from the net proceeds, and he will find that his policy is a long way from being the "best."

Let us examine the figures, and take a planter who cultivates 500 acres of open land, employs 25 hands, and has all the necessary mules, horses, wagons, plows, etc., which are necessary to make a crop. He thinks it pays better to raise "all cotton and no corn," and believes that it is folly to plant land in corn which would produce, perhaps 10 bushels, worth \$1 per bushel, \$10—which, if planted in cotton, would yield 200 lbs. of lint cotton, worth \$86. We select such a man, and we are sorry to say there are plenty of them, and now, look how his "policy" works.

Say he makes four 500 lbs. bales to each of the hands, (which is a fair average) and sells his 100 bales at 18c. per lb. net, after paying freight, commissions, etc. He thus receives \$9000 for his cotton crop. Now let us place this sum to his credit, and then examine the debit side of the account. 25 laborers at \$125 per annum, cost \$3,225. 4,550 lbs. of meat to feed 25 hands, (allowing 2½ lbs. each per week) at 20c. per lb., \$910. Wages of overseer and his board, \$750. Blacksmith's work, iron, etc., to keep up tools, wagons, etc., \$250. Loss of mules by death and depreciation in value, say \$500. Depreciation of implements, \$250. Purchase of salt, nails, and sundries during the year, \$250. Taxes, \$250. Interest on the investment, say \$10,000 at 7 per cent, \$700. The total of these sums is \$7,085.

Now for the no corn part of the policy.

The 25 hands, consuming each, 1 peck of meal per week, require 325 bushels of corn, which, at \$1 per bushel will amount to \$325. The 20 mules and horses, which are required to work 500 acres of land, will consume, or ought to consume 75 bushels of corn each, in the year, 1500 bushels, equal to \$1,500, and they will consume, at 10 lbs. each per day, 73,000 lbs. of hay, worth, at \$2 per cwt., \$1,460.

The books, therefore will stand thus:

Net proceeds of cotton.....	\$ 9,000
Expenses of making it.....	10,370
Loss on the year's operation.....	\$ 1,370

We have not, it is observed, made any allowance for fertilizers. But suppose they have been used, and that 70 tons at \$70 per ton, have been applied, at a cost of \$4,900, exclusive of freight and hauling, and suppose they have increased the crop to 6 bales to the hand instead of 4, the result would be about the same.

Our calculation is, it must be admitted, a moderate one. On an average of years more planters make less than 4 bags to the hand

without fertilizers, or 6 bags with them, than there are who make more than this. Since 1863, those who have bought corn and provisions have oftener paid more than less for these articles than the prices we have named. We have calculated cotton at 18c. net. That is certainly a liberal estimate. Who would not be willing now to take that price for his growing crop?

But on the other hand, let us take a provision-making planter whose practice it has been to have corn and meat of his own raising who has the same amount of open land, of which he has 25 acres in wheat, 25 acres in oats, 250 acres in corn, and the rest in cotton. Say that his expenses for labor, overseer, blacksmith's work, loss and depreciation of property, cost of sundries, taxes and interest on investment, are the same. He makes half the quantity of cotton, yielding a net income of \$4,500. He raises, say 400 bushels of wheat, worth \$600; 400 bushels of oats, worth \$300; 3000 bushels of corn worth \$3000; 1000 bushels of peas, worth \$1000; and all the fodder he needs to feed his stock. He does not expend one dime for the meal for his hands, the food for his animals, or for Northern hay, thus saving \$3,285. He has plenty of corn to raise his meat, and is thus able to furnish his hands at less than half the market price—a saving of \$455, and has a good surplus in his crib for another year.

Now how does his account stand at the end of the year? Let us take the debit side first:

His expenses, same as the all-cotton planter are:

Labor.....	\$3,225
Overseer.....	750
Blacksmith's work.....	250
Loss and depreciation of property.....	750
Sundries.....	250
Taxes.....	250
Interest.....	700
Meal for hands.....	325
Meat for hands.....	455
Corn for stock.....	1,500
	\$8,455

His income is as follows:

Cotton.....	\$4,500
Corn.....	3,000
Peas.....	1,000
Wheat.....	600
Oats.....	300
	\$9,400

To this should be added, all the straw, shuck and pea hay, and the surplus fodder, after supplying the stock. Then add the saving of time and labor in hauling, loss, and wastage in bought corn, hay, etc., and then consider the advantage

to the plantation from even a partial rotation of crops, and it will be found that the planter who follows this policy is doing a better business in every way than the "all cotton" man. His teams look better, and are worth more. His overseer never tells him the "corn is all out," that he has taken the mules out of the plow and has sent after the corn to the depot twice, and that it "aint come yet;" that the last meat that was bought was bad, and the "hands is complainin' ;" that the cows are all going dry for want of peas; that he can't make the corn and meat hold out according to the weights given by the merchant; that some of the last corn was bad and two of the best mules died of the colic from eating it. that the hay was musty in the middle of the bales, etc., etc.

Then suppose an all-cotton man has a bad year—that a drought, too much rain, the caterpillar, or army worm, cuts off his cotton crop, and instead of 100 bales he makes only 50; or suppose the price falls to 15c. or even 12c. per lb. or lower, because owing to the spread of the "all cotton and no corn" mania, the crop is very large; or suppose the corn and hay crop of the West and North fails, and corn, hay and meat bring higher prices than they bring even this year—then compare the man who has risked everything on his cotton crop with the man who has "a plenty of every thing to do him." The one is utterly ruined. The other is able to go to work to try again. He, his hands, and his animals, have plenty to eat. He does not owe anything. He has no necessity to borrow. His land is improving. His credit is good. *He is independent.* His is the policy for planters to pursue. It is the "*best.*"

The Correct Length of Whiffle Trees.

A horse can not draw as well with a whiffle-tree twelve feet long as with one two feet six inches in length, because the line of draught is not in the proper direction to be most effective. Nor can two horses, harnessed abreast, draw well with whiffle-trees ten feet long, while their heads are coupled close together, because they must travel sideways, more or less, in which position no animal can exert all his strength to the best advantage in hauling a load.

Horses draw best with the double whiffle-tree just long enough to allow them to stand close to each other, having the single whiffle-trees attached directly behind them, and just long enough to meet in the middle. When the double tree is very long, each horse must draw more or less sidewise, if the coupling-lines and the neck-yoke are not made long enough to allow them to move directly forward, without having their heads turned toward each other. In order to determine the correct length of whiffle-

trees, let two horses stand side by side, with their sides three inches apart; then measure from the centre of one horse to the other on their backs. This will give the length for a neck-yoke, and the correct length for the double whiffle-tree, between the joints where the single-trees are to be attached. When a neck-yoke is only eighteen inches long, and the double-tree of the proper length, horses will be required to move more or less sidewise. For the same reason, oxen often get in the habit of hauling sidewise, because the yoke is too short. Neither oxen nor horses can travel easily and freely, when their heads are turned toward, and their butts from each other.

Whiffle-trees for plowing should always be as short as they can be made, without bringing the traces against the legs of the team. A very long double whiffle-tree tends to make a plow take too wide a furrow-slice. If the clevis be adjusted to take a narrow furrow-slice—when the double-tree is too long—the plow will not run at all satisfactorily. The horse in the furrow will not be able to walk squarely in his place, because the line of draught is such as to keep crowding his hind feet out of the furrow on the plowed ground.—*Journal of the Farm.*

From the Gold Hill (Cal.) News.

Solid Soda—A Million Tons of it in Sight.

Some two miles north of Sand Springs road, and fifty miles east of Virginia and Gold Hill, is an immense and apparently inexhaustible deposit of almost pure soda. It is owned by parties in Carson and Virginia, who use it in the manufacture of soap, and also supply quartz mills with it as a chemical agent in the reduction of ores. They also supply it to drug and grocery stores, where it is sold for washing and other purposes for which common soda is ordinarily used. It is free from all earthy matter, and consists of eighty per cent. soda, the balance being salt or something of the sort. The deposit is in the midst of an alkali flat of some seventeen acres in extent, and at the surface it appeared only about three feet wide, or rather more like a soda spring than anything else, the pure article forming in a crust over and about the strong watery solution. Upon digging beneath this, however, the solid soda was discovered in a defined mass like a quartz ledge. A shaft has been sunk beside it to the depth of fifty feet, from the bottom of which a drift has been made twenty-five feet into the vein or deposit of soda, without getting through it. In fact, very little is known of the depth or extent of this huge deposit of soda except that there is apparently a million tons or more of it in sight. The inclosing walls on each side are very distinctly defined, and are simply composed of a dark, heavy, compact, iron sand, strongly impregnated with soda. This deposit is as singular as it is valuable, and goes to show how little the varied and inexhaustible resources of our young State are developed.

Educate the whole man—the head, the heart, the body: the head to think, the heart to feel, and the body to act.

Turnips.

In England, where the science of agriculture has reached a higher degree of perfection than in any other part of the world, there is no more important crop than turnips. So much so that it has been said that England could bear better the failure of the Bank of England than the loss of the turnip crop for two successive years.— This seems to be an extravagant statement, but it is not so much so as it appears, because on the success or failure of this crop depends, in a great measure, the agricultural operations of the country, turnips being one of the chief articles of food for stock, one of the main features of the rotation system, and the basis of most of the farm yard manure, which contributes mainly to the great fertility of English farms.

Beyond a "patch," varying in size from an acre down to a quarter or eighth of an acre, very few Southern farmers grow any turnips, and even this is scratched over, sown broadcast, and only thinned as the roots are pulled for use or for "greens." There are a few exceptions, but they are very few.

The great value of this crop is in feeding stock, in the increased number of stock which its production enables farmers to keep, in the large returns which it gives to the land in the shape of manure, whether fed to sheep or cattle penned upon the patch, or in stalls or yards, in its mixture with dry food, making the dry food more beneficial than it would be by itself, and in the clean cultivation which it causes, thus preparing the land in the best way for the crops which follow it.

The land for turnips cannot be too often or too deeply broken and pulverized, or too heavily manured. The seed, (from 2½ to 3 lbs. to the acre) should be sown in drills from 2 feet to 27 inches apart. The manure, stable manure or super-phosphate, should be distributed in the drills at the rate of 400 to 500 lbs. per acre, covered with the plow, and the beds or ridges then flattened with a roller, which could be so constructed as to roll two or three beds at a time. The seed should then be sown with a seed drill, which opens, drops the seed, covers and rolls at one operation. This is vastly preferable to the broad-cast sowing which is now almost entirely abandoned by good farmers.— When sown in drills they can be chopped out and cultivated exactly like cotton, leaving the plants at the last hoeing 12 inches apart in the rows for Ruta Bagas or Swedes, and 9 inches for other kinds.

The most substantial, most easily kept, and

least liable to rot is the Ruta Baga. The Rutabagas, Norfolks, White Globe, and Yellow Aberdeen are all good varieties, but we think the Ruta Baga is the best.

The Ruta Bagas should be sown from the middle of July to the 10th of August, and the other kinds may be sown from the middle of August to the 1st of October. The seed should be sown in dry earth, just before a rain, if possible, and when well up, they should be sided with a coultter and chopped out precisely as cotton is worked the first time.

The great danger to this crop is the fly. It often attacks the plant as soon as the first leaves expand and often destroys the crop. Liberal sowing and rapid growth have been found to be the best defence against the fly; but the application of lime, ashes or soot, or a mixture of all together, to the leaves, when the dew is on them, has been found effectual.

The turnips may be left in the field all the winter and pulled as they are needed, or if the land be wanted for a grain crop, they can be safely kept in banks like sweet potatoes.

With good preparation of the ground, careful sowing, reliable seed, and thorough after-culture, from 800 to 1000 bushels of Ruta Bagas may be produced, which it is estimated are equivalent to 7 tons of the best timothy hay. Crops of this size have been frequently raised, and we have recently read accounts given by farmers in New England where as many as 1500 bushels have been raised. Cannot Southern farmers do as much if they try? We believe they can, and can thus make themselves independent of that Northern and Western hay which we have been so pained to see them haul in this Spring, at \$2.00 to \$2.50 per cwt. We would impress them with the great value of the crop, in the abundant supply of rich, succulent food which it affords for their stock during the winter, in its benefit to the health of the stock, and its fattening properties, in the means which it supplies to keep more stock and lastly in the large heaps of stable manure which it produces for the improvement of the farm and the increase of all other crops. These have been the result of the turnip crop in England and Scotland, where it is now regarded universally as "the foundation of improved husbandry." We believe that the Southern planters would derive similar advantages from it, and find ample compensation for the expense and labor which it requires.

Now is the time to prepare. Everybody has an acre or two close to his house which he can

devote to turnips. Let the patch be plowed, re-plowed, cross plowed and harrowed. Purchase three or four pounds of good Ruta Baga seed, five or six hundred pounds of good superphosphate, sow the seed as above directed from the 20th to 31st of this month, give them the same cultivation as you have given cotton, and Providence willing, there will be no necessity for anybody who tries it to send his hands and teams to the depot next spring to haul home Northern hay to save his stock from starvation.

The Value of Drainage.

While no fact in agriculture has been more abundantly proved than that the underdrainage of land increases the quantity of the crops, so much so that the net increase of produce in two or three years is more than sufficient to pay the entire cost of the work—how few planters have undertaken this improvement at all, and how very few have attempted it, except upon a very small scale.

Those who comprehend its utility, and admit its full value in the improvement of the quantity and quality of the crops, and the protection it affords against the dangers of too wet or too dry weather, are deterred from adopting it on account of its expense, and are waiting until tiles can be procured at cheaper prices than those which rule at present.

We propose to demonstrate in a series of short articles compiled from the writings of the most experienced and skilled scientific agriculturists the value of under-drainage, and that by its means the crops can be increased at a less cost than by the purchase and cultivation of more land, for drained land pays no more tax and needs no more fencing than undrained, while it can be cultivated with far less expenditure for labor.

The advantages of drainage have been summarized by Klippart as follows :

- I. It removes stagnant water from the surface.
- II. It removes surplus water from under the surface.
- III. It lengthens the seasons.
- IV. It deepens the soil.
- V. It warms the under soil.
- VI. It equalizes the temperature of the soil during the seasons of growth.
- VII. It carries down soluble substances to the roots of plants.
- VIII. It prevents "freezing out" or "heaving out."
- IX. It prevents injury from drought.
- X. It improves the quantity and quality of the crops.
- XI. It increases the effect of manures.
- XII. It prevents rust in wheat, and rot in potatoes.

A French agriculturist in the subjoined short paragraph illustrates the process of drainage and its value : He says :

"Look at this flower pot. What is the hole in the bottom for ? I ask, because there is a complete agricultural revolution in that hole. It affords a renovation of water by a timely flow. And why must water be renovated ? Because it gives either life or death—life when it merely traverses a layer of earth which retains the fecundity with which water is pregnant, and besides dissolves nutriment conveyed to the plant ; death when it remains in the pot, because it will soon be corrupted, will cause the roots to become diseased and prevent admittance to new water."

Now, the hole at the bottom of the flower pot is the under-drainage of land. This illustration is somewhat hackneyed, but there is none which exhibits so simply and conclusively the exact operation and advantages of drainage. Let anybody who thinks that draining land "won't pay," take two common flower pots, the one perforated at bottom and the other not, fill them with the same amount and kind of earth, plant the same seeds in each, place them side by side and give them exactly the same amount of water, and it will be found that the seeds in the perforated pot will germinate soon, and the plants grow vigorously and fruitfully, while in the other pot the seeds will frequently not germinate at all, and where they do, the plant will have a puny and sickly growth.

The perforated pot represents an under-drained, and the other a soil which is not drained. A drained soil is porous, and when rain falls, the water descends through these pores, and is carried away, and thus not only is the surplus water carried away, but in its descent the rain renews the oxygen of the soil which is as necessary to the roots of the plants as it is to the lungs of animals, and removes the old oxygen which is injurious ; in this way, preventing the stagnation of water, aerating the soil—rendering it porous and pulverized—renewing the healthy and removing the unhealthy gases, and bringing new solvents of the organic material which form the nourishment of plants. It has been ascertained by chemical experiment that it requires four times a greater amount of heat to convert water into vapor than it does to boil water at the freezing point. In an ordinary shower it frequently happens that water falls to the depth of one inch. In this case the water which would fall on one acre would be equal to 360 hogsheads, to evaporate which by solar action would need as much heat as it would take to bring 1500 hogsheads of water from the freezing to the boiling point. On undrained

land, where a large proportion of this water is stagnant, and is only carried away by the slow process of evaporation, the soil is kept for a long time wet and cold, and as a necessary consequence, vegetation is checked, if not seriously injured, whereas, on drained land, the surplus water is carried away at once, and the heat required to evaporate the stagnant water is made available for warming the soil, thus lengthening the growing season, and making the subsoil as warm as the surface.

Many persons who have not taken the trouble, or have not had the opportunity to study the subject, object to draining because they believe that it carries away the moisture which is necessary for the nutriment of plants, and that it is desirable to retain as much as possible, of the rain that falls in a sort of under-ground reservoir from which the roots can drink as they require moisture, and in case of drought have the reservoir to supply them.

This is, however, a great mistake. All soils have what is called "capillary attraction,"

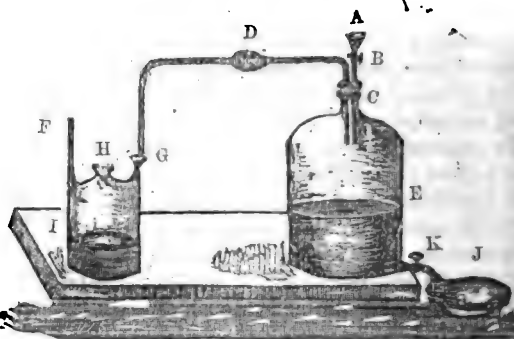
"Fill a glass vessel, E, with moistened soil, to the height of six or seven inches, the bottom of the vessel being provided with a stop cock, K, which should penetrate several inches into the soil, so as to represent a pipe tile as nearly as possible. The mouth of the vessel, E, should be firmly closed with a cork, C, through which is inserted a tube, whose upper portion is a funnel, A, provided with a stop cock, B. This tube is for the purpose of introducing water on the soil within, and the cock, B, to prevent the introduction of air from that source, after sufficient water has been introduced. The other tube, which passes through the cork, C, is

luted to another tube at D. This last is inserted at G, into the vessel I, which is partially filled with water, but the tube G, should not be inserted so deep as to touch the water. The vessel I, is provided with three orifices or openings; through one of these orifices a tube is inserted at F, to admit air, in such a manner, however, as to compel it to pass through the water—the air being lighter than the water, will, of course, rise through it in the form of bubbles; or rather when the bubbles are rising through the water, it is an indication that air is entering through the tube F, from without. The orifice of the stop cock, K, should be kept under water in the vessel J. Having completed these arrangements, close the stop cock, K, and open the one, B, and through the funnel, A, introduce as much water as would probably fall during an ordinary shower. It will be observed that water so introduced does not at once disappear or be absorbed by the soil, but remains on the surface or penetrates very slowly. This is the condition of an undrained soil.

which is in plain language, the power to suck up moisture from the subsoil and elevate mineral substances in solution, and the more thoroughly the land is pulverized, the greater is the absorptive power. The soil being finely comminuted and the hard subsoil pan being broken up and rendered porous, the roots of the plants imbibe water from below, while the surface is exposed to the action of the air being laden with a great amount of moisture is received in the form of dew.

In a hard soil where the water cannot find its way through, it stagnates and has no other way to escape than by evaporation. Before this takes place by the action of the heat and light upon it, it becomes poisonous to plants, because it remains for a long time, wet, cold, and in a state of slow decomposition of manure, which forms noxious acids, which are deleterious to plant growth.

Klippart in his excellent work on Land Drainage demonstrates by the annexed illustration the manner in which drainage operates:



"Now, to represent the action of rain on a drained soil, open the stop cock, K, and bubbles of liberated gas will soon be seen to rise in the vessel, J; these bubbles are liberated from the soil—those who have analyzed the gases, state that a large amount of oxygen is combined with gases deleterious to plants contained in them, and are therefore of opinion that less oxygen is found in soil immediately after a shower than before—the oxygen being restored only as soon as evaporation takes place. While the gases are being liberated through the stop cock, K, bubbles will be seen rising in the water in the vessel, J; thus it is demonstrated that each shower enriches drained soils with new oxygen. As soon as K is opened, the water which was on the surface of the soil at E sinks at once; but soon as it is being discharged at K into J, the bubbles cease, or nearly so, to rise in I."

In our next article we intend to show how drainage removes surplus water and lengthens the seasons.

From the N. O. Picayune.

India vs. American Cotton.

Several years have elapsed since the close of our civil war, and each one has been diligently employed by England in developing new sources of cotton supply. The apparent success of her efforts in 1866, and the following season, produced grave apprehensions on this side the Atlantic, and the condition of the South at that time was so unpromising that there was really good ground for believing that the great staple would ere long lose much of its importance, and the Southern production dwindle to insignificant proportions.

The note of alarm was sounded throughout the country, and Congress called upon to assist in restoring the South to her former position, in order that the balance of foreign trade might be settled in favor of the United States. Notwithstanding the important part which the staple has always played in settling the finances of the whole country, and which has been so fully elucidated during the present season, the National Assembly persisted in their mad work of "reconstruction," upheaving society, discouraging enterprise and rendering the laboring population discontented. Despite these obstacles, and in the face of difficulties greater than any people were ever called upon to overcome, the Southern planters, with manly fortitude, worthy of their past history, have struggled on; and to-day the outlook is so encouraging that we may safely predict an eventual recovery of our former grandeur, and possibly of our monopoly of the cotton production of the world. The freedmen are becoming familiar with their new condition, are beginning to realize that they are under a stern master, necessity, and that naught but labor will provide them with food and clothing. There are exceptions to the rule, but on the whole we may assert, without fear of contradiction, that the morale of the negro is better, and that he will henceforth improve. The indications that a class of sturdy and industrious white laborers will soon pour into the South in large numbers from other sections, are multiplying. The planters do not seem disposed to diversify industry, but on the contrary, are more inclined to cultivate cotton or sugar exclusively.

Such being the condition of the South, let us look abroad to other fields and behold what British enterprise and capital have accomplished. The most prominent source of supply outside of the United States, is in India. Here lies the great stronghold of the British cotton empire. While our civil war was raging, and the statesmen of the Confederacy were awaiting recognition, the farsighted rulers of Great Britain were looking over and beyond the idle looms of Manchester to the wide regions of Hindostan. There lay hundreds of millions of acres of land adapted to the production of cotton, and scattered over them an enormous population, principally docile and hardy laborers. This ancient people had remained for ages in the same condition. Their civilization had, as it were, become petrified in the early ages of the world. The coolie cowered before the mighty obstacles

which nature interposed to the development of the great resources of his highly favored country. Mighty rivers which no bridge could span, and gigantic mountain ranges rearing their peaks high up in the clouds, hemmed him in and dampened his ardor.

In these regions the British Cotton Supply Association have directed their labors, and England has dealt out her money lavishly. She has expended many millions of dollars in constructing railroads and canals, to open interior districts, and by furnishing cheap transportation, add to the profits of the producer. A road has just been opened across the peninsula from Bombay to Calcutta, a distance of 1400 miles, at a cost of about \$70,000,000. One is projected from Kharwar into the southern districts of the Marhatta, a line from Ahmedabad to Verumgoon, one communicating between the Punjab and Kurrachee through the valley of the Indus, and also a railroad from Trechenopoly. These will certainly be built, and several other lines are being projected. The Government is asked to guarantee five per cent interest on the investment, which if done, will give great impetus to the construction of the railroads in every direction.

Scientific men have been employed to experiment with the different varieties of cotton plant, to improve the quality of the India staple. These efforts have, however, been only partially successful, though it is admitted that some hybridized cottons promise well, and serve to keep alive hope.

On the other hand the difficulties to be overcome are so great, and are of such a character, that America has decidedly the advantage. It is not believed that the quality of India cotton can ever be brought up to the requisite standard. The climate is not suited to the growth of so delicate a plant, requiring throughout the season certain climatic conditions. Rains deluge the land for nearly half the year, and during the remainder the scorching rays of a tropical sun parch it with drought. It is not a matter of wonder then, that 16,000,000 acres devoted to cotton, should only produce 1,840,000 bales, of 247 pounds weight, at the utmost. The yield is so small compared with the labor bestowed, that the proceeds are not sufficient to purchase even the food and clothing of these economical people. In 1868, when the greatest crop was made—the quantity above mentioned—in the district of Oviassa alone 1,350,000 people died of starvation. From that time the crop has been wavering, and this year, though there was an increase of forty per cent. in the acreage planted, the season has been such that the yield will not exceed, if it equals, that of the last year. The British imports from that country, from the 1st January to the 13th April, are only 109,364 bales, against 131,837 for the same period last year, while the cotton on shipboard from thence is short by 150,000 bales.

Last year the total consumption of Europe was 4,503,000 bales; that of the United States 995,127; making a total of 5,498,127. Of this the United States furnished 2,414,000 bales, of 437 lbs. weight, or about forty-seven per cent. This year she will furnish 3,900,000 bales out of

6,000,000, or in weight about fifty-seven per cent. The imports into Great Britain from 1st January to 18th April were 941,276 bales, of which 609,406 were American. For the same period last year they were fifty per cent. American, now they are nearly seventy-five.

Green Manuring.

Whether the land which has borne a crop of wheat, oats, barley or rye is to be sown again in the fall for another grain crop, or is to be left fallow to be planted in cotton or corn the next year, there is no better or more economical mode of enriching and preparing it than by sowing it broadcast in peas at the rate of 1½ or 2 bushels to the acre, immediately after the grain has been cut and removed, and plowing them and the stubble under with a good turn plow.

In September when the peas have obtained their full growth, a barrel of lime per acre should be scattered evenly over the growing peas, and then the whole turned under with one of the many new plows which are specially adapted to the purpose. That which will bury the entire green growth is the best.

Even at the present extravagant price of peas, \$8.75 per bushel, it will prove the cheapest mode of manuring grain land for use in fall or spring.

Professor Johnson in his great work on Agricultural Chemistry, 417-9, explains the principle upon which green manuring depends and illustrates the important practical results by which it is followed. He says: The ploughing in of green vegetables on the spot where they have grown may be followed as a method of manuring and enriching *all* land, where other manures are less abundant. Growing plants bring up from beneath, as far as their roots extend, those substances which are useful to vegetation and retain them in their leaves and stems. By ploughing in the whole plant we restore to the surface what had previously sunk to a greater or less depth, and thus make it more fertile than before the green crop was sown. This manuring is performed with the least loss by the use of vegetables in the green state. By allowing them to decay in the open air, there is a loss both of organic and of inorganic matter—if they be converted into farm yard manure there is a large loss. *In no other form can the same crop convey to the soil an equal amount of enriching matter as in that of green leaves and stems.*

Another important result is that the beneficial action is almost immediate! Green vegetables

decompose rapidly and thus the first crop follows a green manuring is benefitted and increased by it. * * * *

It is deserving of separate consideration green manuring is especially adapted for improving and enriching soils which are poor in vegetable matter. Living plants contain their substance not only all they have drawn from the soil, but also a great part of what they have drawn from the air. Plough in these plants and you necessarily add to the soil more than was taken from it,—you make it richer in organic matter. It would be difficult to determine the limit beyond which this enriching process cannot be carried by repetition.

Cattle Plague in Europe.

The Report of the Commissioner of Agriculture for April says:

The intelligence received from eastern Europe relative to the extent and progress of the cattle plague is far from being reassuring. It was hoped that all danger had passed with reference to an extension of malady from the western to the south-western parts of Poland into Prussia and Silesia, but recent information shows that the Prussian government has found it necessary to extend its precautionary measures in this direction, and to have the frontier guard troops from Neuberun, in Silesia, to Weichsel in the department of Posen. Not only is Silesia threatened by an invasion of the disease from her southeastern provinces, but also in the north-eastern, as the plague has extended into Russia as far northward as Knovno. To this new source of danger the government has dispatched troops to guard the frontiers from Tilsitt to Pillkallen, in East Prussia. Poland is suffering to a great extent from this visitation of the plague, as is likewise Galicia, Transylvania and Bukovina.

A young man who thought of studying agriculture asked Daniel Webster if the profession was overcrowded. "Yes," he replied, "but there is plenty of room up higher." And it is just the same in regard to farming. In the production of poor butter the business is overcrowded, but there is plenty of room up higher." For common cows are plenty, but where can you buy a really good one? And so of sheep, cattle. The markets are overrun with inferior animals that sell for less than half price, but are dear at that. And we see the same thing in the grain markets. Those who say there is "no money in farming," are more than right. A poor farmer and a pettifoggish lawyer find the business overcrowded, "but there is plenty of room up higher."

A vivid idea of the weakness of chicken raising was conveyed in a wag's query to his wife at dinner, "Can't you coax that chicken to walk through the soup once more?"

Shelter for Manure.

If the manure from the horse and cow stables, hog-pens, &c., were gathered in a cellar, or placed under a shelter where it could not be washed by rain or scorched by the sun, its value as a fertilizer would be fully double that of the same bulk which has been left exposed to the weather.

An experiment as to the relative value of exposed and sheltered manure has been recently made in New England, the result of which has been published in the *Boston Journal of Chemistry* by Dr. Nichols. It is as follows:

	Exposed.	Sheltered.
Nitrogen.....	1.35 per cent.	1.88
Soluble organic matters ...	1.78	6.22
Soluble inorganic matters.	2.67	8.98
Phosphoric Acid.....	0.20	0.29
Potash and Soda.....	0.79	2.00

Dr. Nichols remarks on the above:

"It will be noticed that in the nitrogen (ammonia forming constituent,) the soluble organic and inorganic bodies, and potash and soda salts, there is a loss in the exposed manure, which renders it of less than half the money value of the other. The quality and the preservation of manures supply topics which should be presented to farmers very often, that they may be led clearly to understand the whole subject, and provide against losses, which are of a most serious nature. We shall refer to this important matter again."

From American Agriculturist for June.

How to Improve Exhausted Lands.

A wealthy New England gentleman writes: "Can you help me? I have an elephant on my hands and do not know how to treat him. I have bought a run-down farm in Virginia of eleven hundred acres. It is a heavy clay loam, and was once considered one of the finest plantations in the country; but the 'skinning process' has done for it—wheat and corn all sold off the place and nothing brought on. The fields are now covered with a growth of young pines and its meadows with briars. There is neither muck nor peat in the vicinity. Does it need underdraining? How about turning under green crops, or using lime, phosphates, etc.?"

If I had this gentleman's purse I should have no fears of being able to make the farm as productive as it ever was, and a good deal more so. And it would pay, too. It probably needs draining. This can easily be ascertained by digging holes three or four feet deep, and if water flows in and remains there, it needs underdraining. Then, after shearing, I would buy sheep by the hundred, and bran by the car-load. I presume bran can be bought for \$20 per ton, and the manure from it is worth at least \$14—in fact, it is better worth \$20 than almost any artificial manure we can purchase. Give each sheep a pound of bran a day and half a pound of oil-cake. Keep enough of them, and they will gnaw down every green thing they can reach. If

you get overstocked at any time feed more bran. The sheep will get very fat and can be sold to advantage. The manure will pay from half to two-thirds of the cost of the food. Success will depend very much on feeding liberally. In the meantime, put in the plows, with strong teams of oxen or horses. It will be rough work; but no matter. Keep the plow in where you can, and where you cannot, draw it through the briars on the surface, striking it in occasionally. Do not stop to back up. Set fire to anything that will burn. If grass grows as freely there as it does here, it will spring up on this partially plowed land and the sheep will eat it with avidity. Keep on plowing. Give up all idea of sowing any grain crop; but sow grass seed in the fall. By stocking heavily with sheep, and fallowing at the same time, the land, in two or three years will be subdued and will yield an abundance of rich grass. Then you can do anything you like with it. The summer-fallowing and the manure from the bran and oil-cake will make it very rich.

Necessity for a Mixed Husbandry.

The correspondent for Stewart County, Georgia, of the Agricultural Bureau, at Washington City, after suggesting further 'interrogatories' tending to show the number of mules and horses, the quantity of bacon, corn, and flour introduced into each county, and the percentage on total consumption, says: "Under a system of mixed husbandry in this county, mules, horses, corn and wheat, can, without doubt, be profitably raised; and would not such an exhibition of facts as the above interrogatories would elicit tend to expose the errors of the present system of planting, and lend important aid in enlightening the Southern mind, so as to hasten the inauguration of a wiser system of mixed husbandry? Nothing but a startling exhibition of the sternest facts and figures will perhaps ever avail to convince the planting mind of the business folly—the suicidal policy—of yielding to cotton an agricultural monopoly in the South. Cotton planting is a habit with our people. This, added to the large aggregate income which it yields, though fictitious in the main, binds the South to cotton production with fetters strong as steel. An imposing array of aggregated statistical facts may break them.

"Another fact fundamental to the agricultural interests of this section of the South is the increasing scarcity of labor. Ever since the date of manumission labor has been steadily diminishing. In consequence, thousands of acres of good arable land in this county have been yielded to sage and brush. As a further consequence the planter is exerting himself to the utmost, with his diminished facilities, to bring up his income to the standard of previous years, when labor was more abundant. This results in favor of cotton. The scarcity of labor also leads to unhealthy competition in the labor market, with its concomitant evils. One of the most obvious is, that unscrupulous men supplant the better class by offering terms to the laborer with which they are unable to comply, and perhaps never intend to; whereas, the

Dirty hands and a sense of independence are to be preferred to kid gloves and a consciousness of being a mere drone in the human hive. Tools rust from neglect. To wear out from use is beneficial. So with man's capabilities—better wear out than let them rust.

Butter Making.

The following extracts are from an article in the *St. Johnsbury, Vt., Times*, written by David Goodall. After speaking of the importance of good cows, good feed, and careful milking, he says:

The next requisite is a cool, sweet, clean cellar for summer, and a clean, sweet milk room for the rest of the season. Here the milk should be kept at about sixty degrees, and when colder than fifty, the milk should be scalded, as it will keep the butter yellow and save labor in churning. Both cellar and milk room must be light and well ventilated, and all the utensils kept sweet and clean. Strain and set the milk immediately after drawn from the cows. At sixty, it will be usually ready to skim in twenty-four hours. Milk not scalded and set in a cold, dark place may be a week in rising the cream, but it had better be given to the pigs without skimming, as butter made from it is hardly fit for human beings.

No invariable rule can be given as to the time of skimming, yet it is very important that the cream be taken off in all cases before the milk becomes thick, because the microscope shows us that at the very time the milk begins to coagulate, decomposition and decay commences in the cream, and that an apparently great and quick growth of mould and fungus rapidly springs up and covers the cream and spoils it. The butter made from it may be barely eatable when new, but it soon acquires a dirty, smoky, bitter taste, and is unfit for table use.

After the cream is put into the pot or can, it should be thoroughly stirred every twelve hours and be sprinkled over the top with fine salt.—Bring the cream to about sixty degrees when ready to churn.

When the butter has come and is gathered, draw off the buttermilk, then put into the churn ice water, or cold water, and wash and work the butter thoroughly, changing the water until entirely free from the buttermilk; then draw off the water and work it out of the butter, and take it out of the churn. If too much water remains in the butter, so that it is crumbly and spongy, work it over by hand and spat it out. The butter being weighed, add three-fourths to one ounce, as you please, to each pound of butter of good fine salt. Some add to the salt the same quantity of granulated white sugar and thoroughly mix with the butter. In spitting and working and salting the butter, great care and judgment must be used, as there is danger of heating the butter and injuring the grain and rendering it greasy; on the other hand if not sufficiently worked the butter will be crumbly. The sugar is no aid in preserving the butter, but is used to improve the flavor, some preferring and some disapproving.

While the butter is warm, and as soon as

salted, put it into the tub and pound it down solid, and if it does not fill the tub, cover it with a cloth and put on it a pint of brine. Fill the tub within one inch of the top, cut a cloth one inch larger than the butter and spread it on the top of it; then cut another cloth one inch larger than the last and fit it on the top, spreading evenly and turning up each edge on the inside of the staves, but it must not hang over as it would draw brine out. Cut a bar of sweet wood, two inches by half an inch, and fit it on the butter; bore through the stave into each end of the bar and put in a wooden pin tight to keep the bar in place, fill the tub with fine salt, and fill again with brine and keep it full. Some put in one-fourth inch of fine salt at the bottom of the tub and cover with a cloth. I think the cloth without the salt sufficient.

Butter made and packed in this way will keep sweet and perfect wherever salt pork can be kept, and as long. When the butter is sold a small saving could be made in removing the salt and part of the brine; but I would advise, instead, to put the makers' name and residence on each tub and let it go, salt and all, and make the buyer promise to keep it all on, and the tub full of brine: because if exposed to warm air this butter will depreciate rapidly, yet it would not change if kept frozen.

From the Bluff City Times.

Letter from a Planter.

UNWISE AND LAMENTABLE.

The planters of the South hire labor to make cotton, they hire the Northwest to raise their corn, hay, fodder, bacon, lard and flour; they hire Cuba and other foreign countries to make their sugar, molasses, syrup, tea, coffee and salt. They hire the North to manufacture their iron, domestic goods, calicoes, boots and shoes, hats and everything to eat and drink (water excepted) and wear for man or beast. Chains, harness, bridges, axes, axe-handles, hoes, shovels, spades, leather, tobacco, patent lamps, coffee roasters, little quilting machines, and every kind of trick that Yankee ingenuity can devise, is brought and sold to the unwise cotton raiser. I was born and raised in the South, and have been a planter for more than a half century and have never bought any corn or bacon for family use, and will say to all planters of the South that if you do not raise more of your own consumption you will bring starvation and degradation in your own households. Without a change how will your posterity fare? Will you take my advice? If so, make your own support at home. Outside of that raise as much cotton as you can. Lay up the proceeds for your tender offspring after you are gone. What would be your condition if cotton should fail? Awful in the extreme. Let us all endeavor once more to become an independent and happy people, is my earnest desire. SOUTHERNER.

Bullock County, May 10.

Fruit lands in the vicinity of St. Joseph and Benton Harbor, Mich., are sold at from three to five hundred dollars per acre, and some have been held as high as \$1000.

For the Southern Farm and Home.

The Hatchet on the Mantel.

(Dedicated to Mr. and Mrs. C. W. Lane.)

BY MARY FAITH FLOYD.



I lived in a quiet straggling village where I was poor, obscure and unknown. I enjoyed all the vexing cares that usually attend that situation; but such cares, it may well be imagined, were not much in unison with my taste. I did not resemble Dean Swift, or his ancestors, in regarding "labor as pain." I had

a love for all kinds of work; and unfortunately for myself, and for the world, I differed from the learned doctor in all other respects. I was neither learned nor witty. Unfortunately; because wit and learning are both pleasing when not intermingled with arrogance and pedantry. I consoled myself for these defects by the reflection that my industry would compensate, in some measure, for the absence of other qualities, and hoped I might get through life with this meed of praise—that I was a useful member of society.

There was one happiness I had, which I was fond of enjoying as often as my numerous duties would allow.

Not far from my house, there resided a sprightly, tidy, little lady. Facetious and intelligent, with many of those nameless graces that adorn woman, she never failed to fascinate all whom she met. I had the honor of calling this lady friend; and although I sometimes reflected that an uninteresting companion like myself must annoy by such frequent visitations, so selfish was I that I could not relinquish the comfort and pleasure I experienced in repeating the offence of thrusting my company upon her.

Her home was essentially the opposite of mine. Without being wealthy, she owned all the comforts of life; and the pleasing aspect of her well arranged parlor with its white walls, its simple furniture, and tasteful ornaments, delighted me. I felt no envy that my possessions were of more meagre dimensions than hers. I rejoiced that my friend was exempt from the privations I daily experienced.

Upon the mantel of my friend's parlor, was an unsightly stone hatchet, made after the fashion of the red man before his ideas were modi-

fied by contact with European civilization. I wondered what freak induced my friend to keep this disfiguring ornament for such ostentatious display among her otherwise tastefully selected articles. I did not like to make any inquiries, fearing I should appear prying and impertinent. Being a woman, curiosity repressed became more wide-awake the more I struggled to hush it to sleep by those anodynes, good manners, reserve and non-intermeddling. Every time I beheld the broken, rude tomahawk, the edge of my investigating qualities grew far more keen than that of the mysterious weapon itself, cutting deep incisions into all those weak shields of defence with which I had enveloped myself.

Time, the great modifier, might have enabled me to triumph over temptation but for one circumstance. I called one afternoon, and found my friend sweeping and arranging her room. She looked very charming, with her saucy little white apron, her sleeves rolled up, displaying a finely moulded pair of white arms. Her delicate hands wielded the broom with inimitable grace. Her face was flushed from the exercise, and I paused at the door-way to admire the domestic picture, saying inwardly, "Mr. White's marsh indeed has a treasure in his wife."

My friend greeted me kindly and accepted my offer of aid, saying I might dust and arrange the mantel. My eye fell on the grim, battered stone hatchet, and instantly my curiosity quickened with a lively and irrepressible desire to learn the history of the horrible relic. I could not avoid remarking that the stone was a queer one, and added no beauty to the effect in the mantel arrangement. My friend's face blanched, and her voice trembled as she mentioned that it was an Indian relic of some antiquity connected with De Soto's expedition.

I ventured the statement that I was not sufficiently antiquarian in my taste to treasure ugly broken stones; and that the mantel would be much improved if the relic was discarded.

My friend with much embarrassment said it was valuable in her eyes; and there ensued an awkward pause.

I felt that I had been led into unwarrantable impertinence. Arranging the ornaments, I bade adieu to my neighbor, and returned to my solitary home; but my peace was gone.

I was a prey to torturing curiosity. My friend's mysterious deportment was gunpowder that had exploded all my investiture of self-control.

The wild desire to penetrate the secret pushed aside all other considerations. I could not

sleep. How to elucidate the mystery was the tantalizing question.

I dared not approach my friend again on the subject; and I was sure I could not enter her house and restrain myself. I kept closely at home; but the hatchet haunted me like a spectre. My brain sprung into the most torturing activity.

"Tired nature's sweet restorer,"

notwithstanding all the coaxings in my power, persistently refused her balm. I no sooner closed my weary eyelids than shapes of hideous savages with cleft and gory heads appeared, traced in fiery lines, and gibbered at me. I could almost hear the rattle of their skeleton jaws as they opened and closed with a snap in their pantomimic efforts to speak to me.

I became so timid that the thought of being alone at night was intolerable. I lost my appetite and felt as if my sanity was fast departing. It had been a week or two since I saw my friend, when I received a note inquiring why I had deserted her, and expressing a hope that I was well and would visit her very soon. I replied to the billet saying I was not ill, and would call ere long.

The weather was inclement, imprisoning me at home for several succeeding days. Then came a vernal day. Forest trees and flowers smiled in bright colors beneath their weight of rain drops, as children sometimes laugh with tear-dewed eyes. Twittering birds sung in the branches, and flew from twig to twig in their abandon of happiness. The air was soft with delicate odors. I was weary of my home and of myself. A sudden inclination seized me to visit my friend. I had slept but little for several nights, and I thought a walk in the air might prove an anodyne.

I threw on my hat under this impulse, and hastened to my friend's mansion. Rapping quickly at her door, I was annoyed at no response. I waited a few moments and concluded to enter the dwelling unannounced. Again I rapped, and walked into the parlor, hoping my friend would soon make her appearance. I glanced around at the familiar objects with delight, and was beginning to feel some of my old lightness of heart, when my eye fell upon the unfortunate stone hatchet. I shuddered, placed my hands upon my temples to press back the horrible sensations the object called forth, and threw myself upon the sofa to await my friend.

I knew not whether I fell into a slumber, or a trance; but a lethargy seemed to steal over me,

imprisoning every limb in motionless bondage. The walls of the white painted room expanded into a lengthened vista bordered on either side by primeval forest trees of gigantic height, their vast trunks hidden from view by a thicket of tangled vines and umbrageous shrubs.

By some strange and unfelt transportation I found myself in an open space in this dense wood; and as I gazed in wonderment, a stalwart savage, grim-visaged, and war-painted, emerged from behind a sheltering tree. His brawny breast was uncovered; but a tunic of gaudy colors was belted around the waist. From his shoulders hung a quiver of arrows, and upon his feet were bright-trimmed moccasins. In the left hand he held a bow of great length, and in his belt was thrust the tomahawk. With a bound he alighted near my feet, causing the welkin's echo to answer to the frightful war-whoop.

"Daughter of the pale face, be not alarmed! I mean thee no harm. Those who give way to idle curiosity must sometimes submit to suffer terrors. I have seen thy struggle to restrain thy eagerness to penetrate the mystery of the broken hatchet. The Great Spirit often rewards in this life those who strive to suppress evil or idle desires; and I have been sent from the happy hunting grounds to sate thy curiosity."

I had been so terrified by the war-whoop and the savage's startling proximity that my knees trembled, and I came near falling; but by a powerful effort, I calmed my fears, and the speech of the savage re-assured me. I took a survey of my companion while listening to his words, which were delivered with precision in a deep, clear, bell-like tone. Upon his head tall gaily colored plumes waved in the soft spring breeze. His form was athletic and elegantly proportioned. About him clustered unmistakable graces of nobility and heroic traits.

While I gazed in rapt wonder and deep interest, the lordly savage again spoke:

"Know, then, that I am nephew of Melora, the mighty and beautiful cacique and princess of Cofachiqui, and the remote ancestor of thy friend who is of far more distinguished pedigree than are the boasted descendants of Pocahontas. My illustrious aunt and I hover constantly in spirit around our pale-faced kindred, shielding them from harm and aiding them to perform great deeds.

"Among the followers of De Soto in his march to our village, was a proud handsome cavalier, Juan Vasquez de Gallegos, who became enamored of my sister, the beautiful Mochifa. So

blinded was he by his attachment that he forgot his insatiate hunger after gold, laid aside his sword and buckler, and deserted his post as a warrior to become the husband of the red maiden of the forest.

"For a time the simple inhabitants of Cofachiqui were elated with the conquest Mochifa had made. Juan smoked the pipe of peace, mingled in the dances and joined the chase; but the bright noon-day of happiness was soon beclouded, and dense curtains of doubt hung about the minds of the Indians. The treacherous De Soto rewarded the trusting hospitality of his red brothers by taking their beautiful queen Melora into captivity. Suspicion was aroused against Juan, and the grim warriors sought his life. But all their efforts were eluded by the watchful care of Mochifa. At one time, Juan was bound and secured to a spit before burning coals, that he might be slowly roasted alive, while his tormentors mocked his agony by cruel and insulting words. Juan's shrieks brought the poor wife to the spot, and her entreaties procured his liberation. Mochifa redoubled her vigilance after this warning, seldom suffering Juan to leave her presence. In time she became the mother of a daughter more beautiful than herself. When this child was a few weeks old, Mochifa sat in her wigwam observing Juan who was fashioning some arrow-heads out of the horn of a stag he had slain the day before.

"Her face was full of contentment, and her thoughts were far away, fancying the skill Juan would show in sending his polished arrows through the hearts of the fleet deer. Stealthy steps disturbed her reflections, and ere she could articulate an entreaty, a party of savages fell upon Juan and his head was cleft almost in twain, the stone tomahawk remaining so firmly fixed in the victim's skull that the assassin fled without detaching it. Mochifa sprang forward and clasped her babe to her bosom as her husband sank bleeding at her feet. The bereaved wife named her daughter *Nithlee*, which in the Indian tongue signifies *night*, in token of the darkness that fell upon her heart when she beheld her beloved partner murdered in her presence.

"Revenge is sweet incense to the nostrils of the red man; and Mochifa treasured her wrong, swearing by the bloody hatchet she withdrew from Juan's gory head to preserve it as a relic to be handed down to her posterity, who should avenge her husband's death.

"Mochifa died of a broken heart, and Nithlee became the wife of a young chief of her own

tribe. Sons and daughters were born unto them, and the gory hatchet wreaked vengeance upon the savage murderers of Juan Vasquez de Gallegos, and did good service among the foes of their tribe.

"As the white settlers located in the country, hunting the simple Indian like deer, and winning his land from him, the village of Cofachiqui took the name of Silver Bluff from the tradition that De Soto and his followers searched for silver in the bed of the river, and among the strata of the bluff, some of which resembled silver ore.

"Nithlee's oldest daughter married a powerful resident of Silver Bluff; and to her stone hatchet was intrusted with the solemn injunction that it should be sacredly preserved, and the horrible incident, of which it was a mute but lasting memento, should be related to each new possessor. In the contentions between the white and the red man for several centuries this hatchet figured in various deeds of blood, avenging alike the butchery of poor Juan Vasquez de Gallegos, and the wrongs of the children of the forest.

"From this race of warriors of the house of the illustrious Princes of Cofachiqui, thy friend is descended in a direct line; and the hatchet on the mantel is the ancient and gory emblem of the cruel murder of Don Juan Vasquez de Gallegos.

"Daughter of the pale face! Dost thou wonder that thy friend's countenance blanched at the mention of this bloody memento of a crime? My tale is done. Henceforth beware of the indulgence of idle curiosity!"

With a graceful inflexion of his body, and a lordly wave of his hand, the savage turned and disappeared in the dense forest.

I opened my eyes, and with a start sat up. I was upon the sofa in Mr. Whitmarsh's parlour, and my friend stood smiling beside me.

In my enthusiasm, I fell upon one knee, claiming:

"All hail! illustrious scion of the regal house of the most beautiful Melora, Princess of Cofachiqui! Happy and honored am I to claim thee as friend!

"No longer do I wonder at the store set upon the 'Hatchet on the Mantel!'"

No man can ever become eminent in anything unless he works at it with an earnestness bordering on enthusiasm.

Labor to keep alive in your breast that spark of celestial fire, called conscience.

*For the Southern Farm and Home.***Letter from John Plowhandles.**

Mr. Editor:—As you are, doubtless, aware I belong to a very large, influential, and highly respectable family. In the new edition of the Post office Directory of the Habitable Globe compiled by George Francis Train and Miss Anthony, the Plowhandles out-number the Smiths and Browns by several millions. We have relatives everywhere on the face of the earth.

As you may suppose, it is not an easy matter to trace out all our genealogical ramifications. As a general thing we have faithfully obeyed the divine command to "increase, multiply and replenish the earth." We are a hard-working, frugal, for the most part, virtuous, and honest family. Since "man's first disobedience and the fruit of that forbidden tree whose mortal taste brought death into the world and all our woe, with loss of Eden," we have lived in the sweat of our face, and not only have we supported ourselves, but we have produced all the food, and a large portion of the clothing which the human race has consumed from that remote period, of which Mr. John Milton makes mention, down to the present hour. Yes, Sir, the Plowhandles family have furnished the world with victuals and clothes for nearly six thousand years, and we are still doing so. This, if there were no other reason, entitles us to respect, justice and consideration at the hands of our fellow men. We do not ask for gratitude, we only ask for justice, and for the same respect that is shown to other men who are doing less for mankind than we. But we don't get it, Mr. Editor, and this is the reason which brings me to write to you and ask you to say a word in behalf of me and my large family connection. From time out of mind the Plowhandles family have been like the Agricultural papers, "devoted to Agriculture." A few bearing the name, but not of the old stock, have been preachers, lawyers, doctors, soldiers, manufacturers, stump-speakers and members of Congress, but as a general thing, we have followed the plow which one of my remote ancestors invented, and which probably is named after him, or he after the plow. I am not sure which. Now, what I complain of is that every preacher, lawyer, doctor, soldier, manufacturer, stump-speaker, and member of Congress, is more respected, more honored, and is shown more consideration all the world over than a farmer—a Plowhandles. We are talked of and treated as "clod-hoppers," "delvers of the soil," "boors," "rustics,"

"poor ignorant fellows who only know how to plow or hoe," while a lawyer, no matter how tricky, a doctor, no matter how unskilled, a preacher, however false his doctrine, a manufacturer, even of shoddy, and a member of Congress who sells his vote, is a big man, a smart man, the right sort of a man, and the man who gets everything that is going of honor, profit and trust, and I and my poor struggling relatives have to feed, clothe and pay them all and be told, if we grumble, that it is honor enough for us, "miserable clod-hoppers who only know how to plow and hoe."

Mr. Editor, you were a soldier, and I believe you are a lawyer, and I don't mean to hurt your feelings. Besides you are "devoted to agriculture," and if you do not belong to my family, we have adopted you. I know a heap of other soldiers, preachers, lawyers and doctors who are good and true men, who deserve all the honor they get and a great deal more. No one honors them more highly than I do. I do not want to detract from the merit or worth of "professional men," but I think I am a professional man and all the men of my family are professional men. Is not agriculture a profession as much as preaching, law, physic or soldiering? Do not those who "only know how to plow and hoe," do as much for mankind as the "professional men," and are we not as peaceable, honest, law-abiding, and virtuous citizens as can be found in the ranks of any profession? We often wear homespun, it is true, our shoes are sometimes ill-blackened, and roughly made; our shirts are of hickory stripes, and our hands are hard and out of shape. We cannot talk glibly of what are called "art and literature," we know nothing of the last opera, (all the music we care for is to whistle Dixie as we follow the plow, and sing the hymns at church on Sunday); not one of us can dance the polka, and to save our lives we could not take off our hat and bow as we see some "professional men" do when we go to the cities to buy our supplies. But for all that we are intelligent, well educated, read a good deal, are religious, sober, honest, hospitable, charitable, obedient to law, attentive to our own business, pay our taxes, vote the democratic ticket, pay our preacher liberally, and love our State and section with all our hearts. And, Mr. Editor, we have the most money too. We own the land and the fruits thereof. If it was not for us the preachers, lawyers, soldiers, doctors, etc., would have to starve or become "clod-hoppers" like us.

I have stood it just as long as I mean to stand

it. I insist on it that agriculture is a profession worthy of all honor among men, and I intend that no professional man, I do not care who he is, shall be allowed to rank himself above and consider himself superior to me and my kin.

I do not want to "dignify agriculture" as I sometimes hear professional men condescendingly propose. Agriculture has dignity enough. It is the noblest of all callings under heaven. But I wish that its dignity shall be recognized, and that when a man says he is a farmer he shall be entitled to, and receive equal respect with any member of any other profession.

Respectfully your friend,

JOHN PLOWHANDLES.

P. S.—I mean when I have laid by my crop, (I am a little in the grass just now) to write you again upon this subject.

Forage Crops.

We fear that our readers will think that we have "Northern hay at \$2.50 per cwt." on the brain, and that we have already written enough on that subject.

We own that we have a great dislike to the sight of the little bales which cost about \$8 each at the depot, and which after they arrive there, have to be hauled home at an additional cost of 75c. or \$1, and which, after they are hauled and are opened, frequently prove to be musty and ill cured in the middle, making the good part of them cost \$8 or \$4 per cwt. Our dislike is not caused, we would have the *Rural New Yorker* to know, because the hay is northern. It is not because we are ex-rebels, imperfectly reconstructed, or insufficiently loyal; but because we think that if we only use a little industry, foresight, and attention, our people can raise better forage, and more of it, at one tenth of the price, than that which we import from the North. We want them to keep those \$2 50 per cwt. in their pockets, and save the cost of time, labor and money now expended in hauling home Dutchess co. hay. As the ancient poet says, "we know how to sympathize with the distressed, for we are not unacquainted with misfortune." We have bought northern hay this year, have hauled it from the depot, have paid \$2 50 per cwt. for it, and when we opened it, we found from a half to two thirds of some of the bales unfit for use, and only fit to be thrown on the manure heap.

We therefore "vowed a vow" never to buy another bale of northern hay, and in order to be able to keep our vow, and at the same time feed our stock, we have made exertions to raise

our own forage, have sown clover, drilled corn and millet, and expect, with propitious seasons, to pull "right smart" of fodder.

The late William N. White, among the many benefits, which, during his too short life, he conferred upon the agricultural population of the South, introduced a few years ago, and sowed upon a small patch of ground near his house at Athens, Ga., a species of clover, known as the Incarnate or Scarlet clover (*Trifolium Incarnatum*) which has yielded since the first year, fine pasturage during the months of February, March and April, and then at the rate of about two tons of excellent hay per acre. We frequently seen the patch in bloom, and a more beautiful sight cannot be imagined, especially by one buying "northern hay at 2.50 per cwt. and hauling it from the depot."

We find in the *Cultivator* for July 1867, published a few days before the death of Mr. White, an article on this species of clover, translated from the French of *Mathieu de Dombasle*, which we copy for the information of our readers.

Mr. White sowed his patch in August on soil of medium quality at the rate of 16 lbs. of clean seed per acre. It came up during the fall, grew all the winter, was pastured by calves and hogs during a portion of the winter and early spring, and the hay was cut in May, yielding 2 tons to the acre.

"Plenty of forage," said Mr. White, "can be made with this plant as cheaply as northern hay can be bought at the place where it is grown, (not at the depot). After the seed is once obtained it seeds abundantly, and the seed in the chaff are easily saved."

From the French of M. de Dombasle.

"The scarlet clover has been long cultivated in Southern France as an excellent forage crop. Of late years it has been introduced in some of the more northern departments, where it has succeeded very well. It is no more sensible to frosts than the ordinary clover, especially if sown early, so as to become well rooted before winter. * * * * One ought not to pass the end of August before sowing is finished.

"The most valuable property of this plant is that it may be cut in the spring fifteen days before other clover and ordinarily before lucern. It gives but one crop if cut when in bloom, which only happens where one has no need of green forage early in spring; but when it is cut before the heads appear, a second crop can be cut, but it will be weak unless the soil is strong. Strong soils will be found most profitable for all forage crops. It is not very difficult as to choice of soils, but light sandy or gravelly soils is much better than clays or heavy loams.

"This plant must be sown by itself, and may succeed any cereal or other crop. Consumed green, it is a valuable forage, and it comes at a

time when stock are not particular about green food ; but it is inferior to clover, whether used green or made into hay. One sows, ordinarily, about 16 lbs. of clean seed per acre, or its equivalent in seed left in the head. (4 bushels of seed in the chaff are equivalent to 16 lbs. of clean seed.—Ed. F. & H.) The last method is preferred, as the seed is more sure to vegetate, probably because the envelope left on the seed preserves moisture and facilitates vegetation. This plant likes a firm bottom ; thus in a light soil not infested with weeds it is thought better not to work it deeply after the preceding crop, but to prepare the surface merely, and then sow broadcast and harrow thoroughly. On some soils thorough harrowing is quite sufficient preparation, but if the land be foul it must be plowed, but not deeply, and well harrowed before and after sowing."

Grape Culture in America.

The discoverers of the continent, wherever they touched the coast, or however far they explored the interior, found the grape growing. Gigantic vines clambered over cliffs of granite ledges of limestone, bore down with their weight great trees of the primitive forest, festooned with beauty the borders of rivers and creeks, and, before European herds came to browse them away, ramped down to the very shores of the sea. A cargo of voyagers approaching the coast of North Carolina, while as yet more than a hundred miles off, were met, as they told, with a perfume of welcome so sweet and strong it enveloped and pervaded their ship as if she were sailing among gardens. It was the breath of vine-blossoms, borne on western breezes from that land of the grape. As long as the forest itself had stood it had been the home of the vine, whose generations produced and reproduced themselves within its shelter, waiting for man to come. Three families there were, known to botany as *Vitis labrusca*, *Vitis californica*, and *Vitis vulpina*, otherwise named after the fox, the frost, and the bull. They were mostly hard, thick-skinned, and sour, for their energies were expended in reproduction, to the end that their species might be preserved through the many dangers that beset their wild condition. Yet from time to time they would fling off luscious varieties ; seedlings of chance, though fulfilling design ; fit for the use of man, yet needing the fostering of his hand, because fine and delicate, and perishing without it. And thus those wild originals of the vine will continue to do while the forest stands ; for the rude changes of our climate destroy the tender plants brought from Europe, and a hardy stock is needed that is native to the soil. Seedlings of chance and foundlings of the woods are our Herbemont, Lenoir, and Norton's Virginia, members of the frost family ; the Catawba, Concord, and Delaware, with many more, members of the fox family ; and the Scuppernong, and others of the bull. These we know and have, and others we look and hope for. How many as good or better than they have perished in their bleak nursery for want of adoption none can guess.

But we have vines enough, and they are good

enough to grow wine to satisfy the hemisphere, even though another variety should never be discovered. All needed is, that we know how to place and how to cultivate and preserve them ; and richly furnished as is the board of our national feast, the drink that shall fill its now empty crystals will be worthy of it. The same conditions which produce good apples and peaches can produce good grapes. Diversity of soil and climate will give diversity of product ; warm sunbeams, clear skies, and a dry atmosphere will insure sweetness and flavor in the fruit, and richness, body, and bouquet in the wine. In most of our varieties there is an excess of flavor to be tempered down by cultivation. Many of them are superabundant in sugar, while others yield a juice whose color is so deep that it too might be deemed excessive, if it were possible for wine to be too red. And if the musky flavor of the foxes is by many disliked, be it known that the important family of frost grapes, *Vitis californica*, have none of it whatever, but only such delicate bouquet and savor as the most fastidious European taste may accept. With such materials we must be poor cultivators indeed if we fail soon to produce something better than what Europeans now send for our drinking, and in time something equal to what they keep for their own.

Though few or none of our grape-growers have yet planted in soils poor enough for growing fine wines, and though for various reasons the culture remains still in its infancy, there have already been some good results obtained. The ill-used and much-abused Catawba, whatever may be thought of it as a still wine, has, by virtue of its excess of tartaric acid, such an affinity, so to speak, for sugar, that if, while yet in the greenness of its first year, it is properly compounded with sugar and ice, a summer drink is made of unequalled excellence. A cobbler of new wine, grown in the valley of the Ohio, or Missouri, where the Catawba ripens almost to blackness, drunk when the dog-star rages, lingers in memory for life. The exile from his native land, whom summer heats overtake, will long for it even on the Rhine or Garonne, whose borders supply no drink to match it ; nor can the sherbets of the Orient or claret frappe make him forget the cobbler that repaired his soul in the Western bar-room. For the same reason (its happy mode of combining with sugar) sparkling Catawba, properly made and from choice selections of raw material, is fully equal to the average quality of the Champagne we import. The Scuppernong, too, put up in sparkling form, though in respect to acidity quite opposite to the other, can make as good a drink, to say the least, as Moselle. Delaware and Herbemont, the one for the South and the other for the North, have already proved themselves capable of great things, though every one may not yet know it. Finally, the Norton's Virginia seedling, even when grown on strong corn land, gives an abundant yield of wine that is pure to the taste, vinous, full-bodied, red as blood, yet clear as rock water, which none would require to be taught how to love. Let this only be produced in sufficient quantity, and it will be at once accepted as a substitute for all

ordinary sorts of claret; while for such as shall be grown on fine soils an altogether higher destiny awaits; all of which is written by one who is fully aware that American wines have been immeasurably overpraised.—WILLIAM J. FLAGG, in *Harper's Magazine* for June.

The Cotton Crop.

We have seen a remark made by a paper in New York—"if it were not for the cotton crop, there would be no coin balances in New York banks or in the Federal Treasury! it would all be on the other side of the Atlantic"—which we believe. We add, if the growers of cotton would grow their necessities, such as corn, hay, hog and horse, the South could resume specie payments after two crops; and the "Federal Treasury," with the "New York banks," would soon be crushed under the weight of the green rags and the gold interest bonds.

We dare not let an opportunity slip to give "line upon line," "precept on precept," until there be a change. Say we can make two and a quarter millions of bales, and worth at least two hundred and fifty millions of dollars, it would not need two years to give us specie for all purposes. What is the truth in connection herewith? We ask, what has become of say 4,000,000 of bales, netting four hundred millions dollars? How much gone for the gew-gaws of fashion; for corn and other articles that we can make cheaper than we can make cotton and buy?

We are, with our cotton, supporting the dirty trash called greenbacks and all the thievings incident to an excessive taxation to support these rag princes.

Suppose our cotton crop was kept at home—all it sells for—how long would it be necessary to support the system? We believe in twelve months the bottom would fall out, the top would fall off, and the walls fall down, a wreck of matter as foul as the Augean stable.

We affirm, we have the means within our borders to make a crop of cotton to sell for as much as did the crop of 1868, or will that of 1869, and yet make all our corn, meat, hay, wool and butter.—*Southern Farmer*.

THE LARGEST FARM in England consists of 3,000 acres, and belongs to a man with the Yankee name of Samuel Jones. In its cultivation he follows the "four-course" system, the whole extent of the farm being divided into four great crops—750 acres of wheat, 750 of barley and oats, 750 of seeds, beans, peas, etc., and 750 of roots. His live stock is valued as follows: Sheep, \$35,000; horses, \$15,000; bullocks, \$12,000; pigs, \$2,500. The oil cake and corn purchased annually amounts to \$20,000, and artificial fertilizers about \$8,000. The entire cost of manure, in various forms used, annually costs about \$15,000. Sheep are claimed as the most profitable stock he keeps, from which are realized about \$20,000 a year. His whole income from the farm, though not stated, can be little less than \$100,000.

The arable land of the United States is estimated at 1,250,000,000 acres.

A NOVELTY IN BUTTER MAKING.—A singular method of making butter has recently come into rather extensive use in France, based upon the fact that cream is changed into butter by being simply buried in the earth. The theory of this result is not very intelligible, though the fact is stated to be beyond question; and in Normandy and other parts of France butter is prepared on a large scale in this way. The process consists in placing the cream in a linen bag of moderate thickness, which is carefully closed; then burying the bag about a foot and a half deep in the earth, and allowing it too remain from twenty-four to twenty-five hours. After the expiration of this period, the cream is found to have become hard, and it is then broken up by means of a wooden beater into small pieces, and sufficient water poured in to wash out the butter-milk. To prevent any mixture of earth, it is advisable to enclose the bag in a second one of larger size and coarser quality. This method of making butter saves a good deal of labor, and separates the butter more perfectly than the ordinary process; and it is said that butter thus prepared is of more excellent quality.

REMEDY FOR RUST IN WHEAT.—The following, from a distinguished German Agriculturist, is taken from a Bremen paper: For thirty years I have found this method successful in preventing rust in wheat: Some hours, at the longest six or eight, before sowing, prepare a steep of three measures of powdered quick-lime and ten measures of cattle urine. Pour two quarts of this upon a peck of wheat, stir with a spade until every kernel is covered white with it. By using wheat so prepared, rust of every kind will be avoided. I have often noticed while in the neighboring fields, a great part of the crop is affected by rust, in mine, lying close by it, not a single ear so affected could be found. The same writer says he takes the sheaves and beats off the ripest kernels with a stick, and uses the grain thus obtained for seed.

From the Chicago Tribune.

Flour.

A NEW INVENTION IN ITS MANUFACTURE.

A mode of preparing wheat or other grain for grinding into flour has been invented in Basle, Switzerland, the object of which is to retain in the white or fine flour, made from the central body of the kernel, the nutritive properties which have heretofore been lost by the separation of the bran, and could only be obtained in the Graham bread and bran, or black breads of various kinds. The grain of wheat divides, under the microscope, into three chief layers—1, the epidermis, or hull, or bran proper, which consists of ligneous or woody fibre, and is entirely without nutriment; 2, the gluten coating which lies between the hull and the starch and is the most nutritious part of the grain, containing fourteen times as much phosphorus as the remainder of the grain, and being rich in nitrogen. This portion, which is far superior in nutritive qualities to the superfine flour, is detached with the bran by the ordinary process,

and so lost to the consumers of fine white flour. The bran alone is as free from nutrition as so much basswood, and being rich in silica, is the chief cause of the attrition and blunting of millstones. Inside of the bran is the deposit of starch which forms the ordinary fine wheat flour.

The process invented by Herr E. Weiss, of Switzerland, for removing the bran only, without the gluten-coating, has been received with favor by scientific journals and practical men of Europe, and is well worthy a trial here, if, as we assume, it has not already been tried.

It consists simply in moistening the wheat before grinding in a solution of caustic soda in water, 140 pounds of the liquid, or seven per cent., being required for 2,000 pounds of grain. The solution is prepared by dissolving 6½ pounds of caustic soda in 188 pounds of water. The steeping may be from fifteen to twenty minutes, and may be done in vats similar to those used by brewers. The caustic solution swells, and loosens the hull proper, so that it may be removed by the slightest friction, leaving the gluten with the body of the grain. The flour thus prepared is as white as the present superfine, contains all the highly nutritive properties of the Graham and bran breads, without their heaviness and sourness, and there is a perceptibly less waste in grinding. The success of the experiment can be easily tested and compared with the present mode of removing the bran and gluten together, by the aid of a microscope and a solution of iodine. The iodine, having the property to turn all nitrogenous substances yellow, if applied to a cross section of wheat, separated from its bran in this manner, will show the gluten coating as a bright yellow, clearly defined from the starch granules, which turn, under the iodine, to a deep violet. The ordinary flour, on the other hand, will show the violet only, while the bright yellow portion remains with the bran.

The Josh Billings Papers.

THE ANT.

The ant iz a menny footted insekt.

They live about one thousand five hundred and fifty of them (more or less), in the same hole in the ground, and hold their property in common.

They hav no holydays, no eight hour system, nor never strike for enny higher wages.

They are cheerful little toilers, and hav no malice, nor back door to their hearts.

There iz no sedentary loafers among them, and yu never see one out of a job.

They git up arly, go tew bed late, work all the time, and eat on the run.

Yu never see two ants argueing some phoolish question that neither of them didn't understand; they don't kare whether the moon iz inhabited or not; nor whether a fish weighing two pounds, put into a pail ov water already phull, will make the pail alop over, or weigh more.

They ain't a hunting after the philosophers's stone, nor getting crazy over the cauze ov the sudden earthquakes.

They don't care whether Jupiter iz 30 or 31

million ov miles up in the air, nor whether the arth bobs around on its axes or not, so long as it don't bob over their korn crib and spill their barley.

They are simple little bizzy ants, full ov faith, working hard, living prudently, committing no sin, prazeing God by minding ther own bizzness, and dieing when their time comes, tew make room for the next crop of ants.

They are a reproach to the lazy, an encouragement tew the industrious, a rebuke tew the vicious, and a study tew the christian.

If yu want tew take a lesson in arkitekture, go and set down by the side ov their hole in the ground, and wonder how so menny kan liv so thick.

If your pashunce needs consolashun, watch the ants, and be strengthened.

If man had (added tew his capacity) the pashunce and grit ov these little atoms ov animated natur, every mountain on the buzzum ov the arth would, before this, hav bin levelled, and every inch ov surface would scream with fruitfulness, and countless lots ov human critters would hav bin added tew the inhabitants ov the universe, and bin fed on korn and other sass.

I hav sot by the hour and a half down near an ant-hill, and marvelled; hav wondered at their instincts, and hav thought how big must be the jackass who was satisfied to beleave that even an ant, the least of bugs, could hav been created, made bizzy, and act to work by chance.

Oh, how I do pity the individual who beleaves that all things here are the work ov an aksident! He robs himself ov all plezzure on arth, and all right in heaven.

I had rather be an ant (even a humble, bandy-legged, profane swearing ant) than tew look upon things ov this world az I would upon the throw of a dice.

Ants are older than Adam.

Man (for very wise reasons) was'n't bilt until all other things were finished, and pronounced good.

If man had bin first he would hav insisted upon bossing the rest ov the job.

He probably would hav objektet tew having enny bizzy ants at all, and various other objekshuns would hav been offered equally green.

I am glad that man wuz the last thing made.

If man hadn't hav bin made at all, yu never would hav heard me find enny fault about it.

I havn't much faith in man, not bekause he kant do well, but bekause he wont.

Ants hav bye-laws, and a constitushun, and they mean sumthing.

Their laws aint like our laws, made with a hole in them, so that a man kan steal a hoss and ride thru them on a walk.

They don't hav enny whisky ring, that iz virtewous, simply bekause it hooks bi the millyun and then legalizes its own akts.

They don't hav enny legislators that you kan buy, nor enny judges, laying around on the haff shell, redly tew be swallered.

I rather like the ants, and think now shall sell out my money and real estate, and jine them.

I had rather jine them than the bulls or the bears, I like their morals better.

The bulls and the bears handle more money it iz true, and make a grate deal more noize in Wall street, one ov them sticking his horn into a flabby piece ov Erie tossing it up into the air, and the other ketching it when it comes down, and tramping it under his paws.

This may be phun for the bulls and the bears, but it iz wuss than the cholera morbus for poor Erie.

Ants never disturb Erie; yu couldn't sell one enny Erie, enny more than yu could sell one skrip on the cod-fish banks ov Nufoundland.

Ants are a honest, hard-tugging little people, but whether they marry, or giv in marriage iz beyond my strength, but if they don't they ain't no wuzz oph than they are out west (near the city of Chicago), where th'y marry to-day and apply for an injunkshun to-morrow; and are reddey the next day to fite it out again on sum other line.

Wedlok out west (near the grate grain mart Chicago) iz one ov the a kind ov loks that al-most enny one kan pi k.

Scientific Department.

From the Architectural Review.

Artificial Stone.

We have more than once called attention to that most interesting subject *the making of Artificial Stone*, and have reason to know that it has its thinkers, and its observers who do not yet think, but listen and note. The thinking portion of our practical readers occasionally experiment on the subject, and the simply observant wistfully watch the result of their labors.

It is true that we have had some unsuccessful efforts to produce artificial stone; but the very failures have in them so many incentives to still further efforts, that they but make way for the coming success.

Knowing then how generally interesting is this subject, we gladly seize on every additional piece of information which may add to the existing stock, and now present the following, from the *Engineering*, a well-known London scientific journal.

For about twelve years the "Beton agglomeré" of M. F. Coignet has been employed in France, at first sparingly, and with hesitation, but of late so largely and with so much confidence, that many of the large works in and near Paris have been constructed for the most part, or entirely, with this material.

So early as 1850, M. Coignet had experimented further than his predecessors Fleuret (1800) and Lebrun (1829), but the conglomerate he then produced was unsatisfactory. In the commencement he employed a crude mixture of coal cinder with lime, and subsequently he substituted sand for the former ingredient, and mixed it with powdered lime, moistening both together instead of wetting the lime as he had at first done. The second process to which he arrived, after modification and a long series of experiments with materials from different dis-

tricts, and under varying circumstances; to ascertain the best proportions, is the system which has now grown into such a vast industry, and which bears his name.

The beton Coignet is a mixture of a large portion of sand with a small proportion of lime to which is added a percentage of cement varying with the amount of hardness or the rapidity of setting required. Only a very small quantity of water is employed to moisten the lime and sand. Thus tempered the mass is reduced, in a grinding mill, to a stiff paste, and introduced into moulds of any desired form, and then subjected to the action of repeated heavy blows. By this means it is thoroughly agglomerated, and the mould being almost immediately removed, the beton, shaped to the desired figure, shortly becomes set, and acquires the hardness of stone.

The material thus mixed and compressed under the hammer, when placed in the mould, receives a weight, strength and density which renders it a thoroughly trustworthy building material. On the average 1.81 bushels of cement parts, sand, lime, and cement, make a cubic foot of beton, which will weigh about hundred and forty pounds, and offer a resistance of some two and a half tons per square inch, while ordinary mortar, formed of the same constituents, will exhibit very insignificant powers of resistance. The difference arises principally from the difference in manipulation in mixing mortar an excess of water is always used, which is distributed throughout the mass and separates the particles of lime and sand, retarding the setting, and when after a time the water evaporates, it leaves the mortar more or less porous.

Theoretically, the Coignet process fills all the necessary conditions, and produces a perfect beton, the sand and lime being moistened with a minimum of water, and mingled as intimately as possible. Besides the thorough cohesion of the particles induced by the mixing and compression, the small quantity of water used makes the setting more rapid and more uniform.

In all cases the lime used should be hydraulic in fine powder, and well screened, to free from lumps; for if there are any lumps added into the beton they swell when the mixture is diluted, and weaken the material.

The cements used are always, if possible, heavy and slow setting. The quantity used is proportioned to the rapidity of setting required, and the hardness of stone which it is sought to obtain. For the third ingredient river sand mingled with small pebbles, is the best. If pebbles are large, the concrete produces a rough and unsightly; if it is too fine, it retards the setting, and reduces the hardness. Sand will make very good work, but to produce a stone so good as that formed on a base of river sand, the proportions of cement and lime will have to be increased. Very fine sands, those of the Landes, require very careful mixing and a prolonged compression in moulds to produce a first-class beton.

The ingredients are measured into a mixing barrow, and during the process small quantities

ties of water are gradually added as the mixing proceeds, until the beton becomes in the necessary condition; the more completely this part of the work is done the more rapid will be the setting, and the harder will the stone become.

The ordinary form of grinding mill employed consists of an iron cistern, the bottom of which is perforated, and in the centre of which revolves a vertical shaft, armed with a number of helical knives, and carrying beneath it a cycloidal arm, which in each revolution discharges a part of the paste. A penstock covering the outlet regulates the discharge of the beton. The material thus obtained from the mill is in a firm but plastic state, and it is thrown into a mould, in thin layers, and each layer, as it is laid in, is beaten and compressed by the regular and even blow of a sixteen pound hammer. In order to secure a perfect adhesion and union of the different layers of material, especially when fine sand is used, it is generally the custom to cross-cut the surface of the layer in order that the superincumbent thickness may be thoroughly united to it.

There are two kinds of moulding to which the Coignet beton is applied, the first being used when the material is employed *en masse* in place, the second when it is moulded in blocks to be subsequently employed. The moulds which are intended to be used in place are composed of close boarding kept in place by means of cross-bracing. This mould carries the ornaments which are destined to appear upon the face of the structure after completion. In the second class of work all kinds of ornament can be produced from cornice to statuary.

Of late years the application of the Coignet beton has been equally extensive and varied. In Egypt, where it has been employed on a vast scale, light-houses have been reared out of the almost impalpable sands of the Isthmus of Suez. In Paris, some forty miles of sewers have been constructed of the same material; and arches of the basement buildings of the Exhibition of 1867, saw mills at Aubervilliers, the numerous cellars of many private houses, entire buildings of five and six stories in height, railway bridges at Sainte Columbe, on the Paris, Lyons, and Mediterranean Line, a church at Verinet, and above all, the large works connected with the new Paris water supply.

The exact proportion of materials employed on works of different classes, and with sand and lime produced from different districts, will be interesting. Thus the work about the Exhibition 1867 was formed of a mixture by bulk of 5 of sand and 1 of lime, and $\frac{1}{2}$ of cement. The same proportion holds good for the sewers, and the rapidity of setting is as great, that the centering can be struck within ten hours after the beton is got in place, and the sewers can be put into service in four or five days after their completion. Arches, of which the rise is one-tenth of the span are generally made with a mixture of 5 of sand, to 1 of lime, and $\frac{1}{2}$ of cement in bulk.

The church at Verinet is one of the most interesting of the monolithic structure, and was constructed of sand from pits at Verinet. The mixture was 5 of sand to 1 of lime and $\frac{1}{2}$ of ce-

ment. In the saw mill of Aubervilliers, the arches are 27 feet 10 inches in span, and 18 $\frac{1}{2}$ feet thick at the crown, the proportions are also 5, and 1, and $\frac{1}{2}$ of cement. One of the most generally useful applications of this material is in the construction of the basements of houses. In the ordinary form of construction of stone piers, supporting rubble masonry arches are employed, involving numerous joints, and causing an absence of perfect uniformity. From this cause numerous settlements ensue, which are avoided by the use of the homogeneous beton; for the whole substructure can be made in one single block, over which the superincumbent load is equally distributed, and a uniform pressure upon the foundation is obtained. One house, in the Rue de Miromesnil is constructed entirely of beton, and it contains two staircases, the one formed in the usual way, with a number of moulded blocks, the other a spiral staircase, from basement to garret—a moulith.

The distance of Paris from the source of the Vanne is more than ninety-four miles, and in its course to the city the line has to traverse a series of valleys and ravines, to cross rivers, roads and railways, and the numerous requirements of the works have involved the formation of extensive bridges, aqueducts, syphons, and tunnels. An immense reservoir will be completed almost close to the park of Montsouris, and a long aqueduct upon arches will be made almost close to the old Roman aqueduct of Arcueil. But the heaviest works upon the undertaking are those crossing the valley of Fontainebleau for a distance of more than twenty-five miles between the Loing and the river Essones. This length, almost entirely without building materials, would have, involved very costly works if masonry had been employed, and the Engineer-in-Chief, M. Belgrand, has therefore availed himself of the Coignet process, and utilizing the vast masses of sand that lay ready to his hand, has formed the works of beton. Not only have the aqueducts been constructed of this material, but the tunnels also to the extent of several miles, about six feet six inches in diameter, and eight and five-eighths inches thick, and these were all formed with the same success that has attended the application of the system to the sewers of Paris, the centres having been withdrawn almost immediately after the beton had been rammed into place. The aqueducts crossing the valley are supported upon arches, extremely light, and rising to a maximum height of fifty feet from the ground. The openings are about forty-two feet six inches, and the thickness at the crown fifteen and three-quarter inches. The success which attended the application of this material in the construction of the narrow openings supporting the aqueduct induced the engineer to extend its use to those wider arches spanning rivers, roads, and railways, and, a series of experiments having proved highly successful, monolithic structures, of ninety-eight feet six inches and one hundred and fifteen feet nine inches openings, and with one-sixth rise, were rapidly formed.

It will thus be seen that while we have refrained from experimenting (with one exception) in this method of construction, French en-

gineers have advanced to recognize its value, and to employ it largely for a variety of work, having tested its reliability by a series of exhaustive trials. The single exception to which we refer is the concrete bridge constructed by Mr. Fowler across the Metropolitan Railway at Kensington, but even that experiment was scarcely analogous, for the material employed was simply concrete, mixed with cement it is true, but mixed in the ordinary way, and thrown into the mould instead of being carefully set in layers and well combined, as in the Coignet process. But the extensive adoption of concrete structures in France will probably be followed by an equally extended adoption of the system here.

THE POULTRY YARD.

A CHAPTER ON HENS.—Keeping poultry for both pleasure and profit is destined to be an institution of the farm. For the pleasure of it, the larger the variety the greater the satisfaction, each breed having some points of excellence, and all together they make pretty pictures and interesting studies. For the profit of it, if the gain is coming from eggs, one or two kinds, at the most, should be selected; if from chickens (early or late), some variety that may not be as good for eggs, but better as mothers; or if from breeding to sell, something rare or fanciful or "game" will be desirable.

We propose a brief mention of the characteristics of each breed, in order that those unfamiliar with poultry and poultry-books may be able to judge which will best supply their wants.

Beginning alphabetically, we will take

Brahmas.—There are two varieties of this breed—light and dark. The light are chiefly white in the color of their plumage. The dark have (mainly) dark colored feathers, slightly and evenly tipped with white.

They are among the best layers, usually commencing at six months old; sometimes laying forty eggs before any manifestation of a desire to set, and in the year will produce a satisfactory number of the largest sized eggs.

The dark variety is the largest—cocks of this kind weighing sometimes fifteen pounds; thirteen and fourteen being quite common weights. They are hardy, quiet, grow fast, and, taking all in all, are a first-class bird for either eggs or the table.

Cochins.—The three principal colors of the Cochins are white, buff and partridge color—the two former the most popular. The white should be all white, and the buff any shade of buff, but of no other color. They are a large bird—cocks weighing ten or twelve pounds, and hens from eight to ten pounds. The shanks are feathered down to the toes, and the legs are generally short and set wide apart.

The Cochins are fair layers, but they are unexceptionable setters, always wanting to experiment in that line after every dozen eggs, and are with the greatest difficulty induced to delay a three weeks' incubation. They are a good breed for family use, will give a fair amount of eggs, and will hatch as many chickens as any other kind in the same time; but the chickens

need to be eaten young to be the most unexceptionable to the taste. They can be kept in a small space, bear absolute confinement better than most other breeds, and are better for winter layers than summer.

Creve Cœurs.—The plumage of this fine French variety is mostly black, and they are distinguished from all other breeds by a comb which takes the form of two well developed horns, the whole surmounted by a black crest. They are quite large, weighing from seven to ten pounds. The quality of the meat is said by French writers to be among the best. They mature early; they do well in the closest confinement; lay a fair quantity of the largest sized eggs; are averse to setting, and are a desirable variety wherewith to stock a poultry yard.

Dorkins.—There are three varieties of this breed—gray, silver gray, and white—each having about the same characteristics. They weigh from eight and a half to fourteen pounds, and their qualities as a table bird are unrivaled. They are not good layers except when young. They are most excellent mothers; but the chicks are very tender, and unless kept in a warm, dry pen, but a small portion of those hatched ever arrive at maturity.

Hamburgs.—There are four varieties of this beautiful and valuable bird, all of about equal merit. They are quite small, weighing from six to seven pounds; will almost always lay from two hundred to two hundred and fifty eggs a year; consume but little food. They love a wild range; will fly over a fence ten feet high. The chicks are hardy; the hens do not care to set, and as egg producers are probably the most extraordinary breed known.

Houdans.—This variety resembles the Dorkins. Their plumage is usually white, with large black spangles, and the head is surmounted with a large sized Polish crest.

They are a most valuable breed. The hens are prolific layers of good-sized eggs. The chickens feather with great rapidity, and are fit for market at four months old. The grown fowl is about the size of the Dorkins, weighing from eight to twelve pounds; and taking all the good qualities together, they are one of the best breeds that a "fancier" or farmer can have.

Polands.—There are, at least five varieties of Polands, all of which are about the same size, and mainly distinguished by the difference of color. This breed has its solid merits. They mature slow, are quite hardy if kept in a dry place, and under favorable circumstances, are most prolific layers, never wanting to set. They weigh about six and one half or seven pounds, and on the whole are desirable to have in any farm yard.

Spanish.—The white face black Spanish are truly a most beautiful breed. They weigh from six to eight pounds. They are most excellent layers, beginning when six months old, and giving five or six eggs a week for a whole year. The eggs are not very fertile, and the chickens are not as strong as many other varieties. Their eggs are white, large, and unrivaled in delicacy of flavor. With a warm, dry place for them, they are a desirable breed for any farmer.—

Hearth and Home.



STABLE ECONOMY.

Editor Farm and Home:

FOUNDER.—I see in your May number, a remedy for Founder in Horses. I do not propose to discuss the merits of the cure, but to avoid the Founder.

Founder is produced by violent exercise on a full stomach, and drinking large quantities of cold water. The seat of the disease is in the lungs. The heart and liver are also enlarged so that there is not room for them to perform their office with ease. The liver, lungs, diaphragm and surrounding parts are all covered with brown spots, and are much inflamed. There are many that hold a horse can be foundered with grain. That is not so. A horse may be driven and let stand where there is a cold current of wind that would chill him as badly as water and create founder. Cold creates contraction, heat expansion. Grain would create heat and would relax. I would not say that grain would not injure a horse while hot. You might give corn meal and it would bake in the maw, then there would be no passage. That would kill but not founder.

Heat expands and cold contracts, consequently, the colic cure of cold water, I think, is not a good one.

COLIC, is caused by too much feed and water, or by watering too often. The water reduces the juices of the stomach, disabling digestion, causing the grain to swell, which generates a gas in the stomach, which, passing into the bowels causes pain.

The ears of a horse with colic are always cold. A good remedy:

1½ oz. laudanum.

1 oz. ether.

2 tablespoonfuls soda, dissolved in half pint warm water given as a drench.

Do not exercise the horse with colic, as exercise causes the gasses to move from one part to another, each time causing pain.

STAGGERS.—Staggers is a disease rarely seen

at the North, but is very prevalent in all the South. The food is the principal cause. There is a great quantity of diseased grain used in the South, and too much of any kind is generally given, then as much water as he will drink, which generates an unhealthy gas in the stomach, and causes distention. The blood is inflamed and rushes to the head and inflames the brain.

SYMPTOMS.—A horse with staggers becomes sluggish, stands with head down, eyes glassy, in some cases will rear and fall back, or run, will not eat, takes feed in his mouth and lets it drop, sweats profusely.

CURE.—1 oz. Barbadoes Aloes dissolved in warm water. Repeat half the above in an hour, until it operates. As soon as the first aloes is given blister the head with a strong fly blister, apply over the brain from below the ears nearly down to the eyes, then bathe the legs with as hot water as you can use, and bandage them with flannel, keep them as warm as possible. Then give one drachm of digitalis, 1½ of emetic tartar, and three of nitre. If it should be necessary to repeat give half the above, in three hours. If there is any disposition to eat, give bran. Mash with one tablespoonful of powdered resin, use this for a week. If the horse be bound in his bowels it may be necessary to use injections, which are always beneficial.

G.

COUGH AND HEAVES IN HORSES.—A western physician of our acquaintance, who keeps several horses finds sunflower seed a valuable remedy for cough and heaves. So useful does he consider it, that he is careful to keep a good supply of it always on hand. He claims to have cured a marked case of heaves by feeding a quart or two of the seed daily, and when any of his horses or mules show a disposition to cough, a feed of sunflower seed is given at once, and continued until relief is afforded.

It is said that on the prairies where Rosinweed (*Silphium terebinthinaceum*) is abundant, that horses never have the heaves—and that the resinous leaves of the plant are dried and fed in moderate quantities with beneficial results.—*American Agriculturist*.

Comparative Value of Stock Feed.

R. S. Fay, of Mass., has published the following table showing the comparative nutritive parts of certain products ordinarily fed to stock. This table has been accepted as accurate by many Northern and foreign agriculturists.

100 pounds of hay equal to—

374 lbs Wheat Straw.	276 lbs. Carrot.
442 " Rye Straw.	50 " Indian corn.
195 " Oat Straw.	54 " Barley.
153 " Bean Straw.	45 " Wheat.
339 " Mangold Wurzel.	45 " Peas.
504 " Common Turnip.	45 " Beans.
308 " Swedes Turnip.	

From Walks and Talks on the Farm.

Good Advice.

Feed liberally, work steadily, and clean thoroughly, is my motto in the management of horses. My great trouble is to get the horses rubbed dry and clean before leaving them for the night. Where horses are worked six days in the week, thorough grooming is absolutely essential to their health. The more highly they are fed the more important it is to clean them. Most men use the curry-comb too much, and the whisk and the brush too little. I do not myself insist upon it, but I believe it would pay always to take the whole harness from the horses when put in the stables at noon, and rub them dry, washing the shoulders with cold water and afterwards thoroughly drying them with a cloth. Every man and team on the farm cost me at least \$750 a year; and I question if one farmer in a hundred duly appreciates how much he loses from having poor horses, and in not keeping them in vigorous health, and in condition to do a maximum day's work. Do not many of us from having inefficient horses, poor plows, dull harrows, rusty cultivators, shaky wagons, and other imperfect implements and machines, lose from one-third to one-half the whole cost of a man and team? And besides this, do we estimate how much we lose by getting behind with our work from these and similar causes? I had an old mowing machine that I got with the farm that "for the sake of saving it" I used for two years. Directly and indirectly I have no doubt that machine cost me \$1,000! It cut just as well as a Wood's or a Buckeye, but it was a one-wheel machine with a wooden cutter-bar. We split the bar and had to repair it; then we broke the knife and had to take it to the blacksmith shop to have it welded. He "burnt" it and it broke again. Then I sent to New York for a new knife. This cut off the finger of the only man who knew how to operate the machine and laid him up for several days. The consequence was, we did not get through haying until after wheat harvest. And you can imagine what kind of hay I had to feed out the next winter. Now I have two new mowers that a man cannot break if he tries; and in looking back I can hardly believe that I was ever so foolish as to waste time in tinkering an old worthless machine.

HOW TO TELL THE AGE OF HORSES.—A short time ago we met a gentleman from Illinois, who gave us a piece of information in regard to ascertaining the age of a horse, after he or she had passed the ninth year, which was new to us, and will be, we are sure, to most of our readers.

It is this: after the horse is nine years old, a wrinkle comes on the eyelids at the upper corner of the lower lid, and every year thereafter he has one well-defined wrinkle for each year over nine. If for instance, a horse has three wrinkles, he is twelve; if four, he is thirteen. Add the number of wrinkles in nine, and you will get it. So says the gentleman; and he is confident it will never fail. As a good many people have horses over nine, it is easily tried. If true, the horses dentist must give up his trade.—*Field and Fireside.*

HOW TO KILL LICE ON CATTLE.—A correspondent of the *Country Gentleman*, "dissolved about a pint of strong soft soap in a pail of warm, soft water, and saturated the whole surface of a lousy cow's body with it; after about thirty minutes, repeated the operation, and in thirty minutes longer took a pail of clean water and quickly and thoroughly washed out all the soap water and dead lice in large quantities, put her in a warm stable and covered her with a dry blanket. The next day, after being thoroughly dried, she looked, and seemed to feel, like a new animal; more than doubled her quantity of milk within twenty-four hours and immediately commenced gaining flesh and general thriftiness.

A writer in the *Maine Farmer* recommends that farmers should not keep too many cows, and cites a well attested instance in which *two* cows, by having the same quantity of food given them as had been previously given to *four*, had yielded considerably more butter, cheese, etc., than had been before obtained from double the number—that is, that the *two* upon extra feed had produced more than *four*.

Animals require quantity as well as quality of food. The philosophy of feeding our farm stock has been but little attended to by farmers; yet it is a field of inquiry that will pay as richly for investigation as any the farmer can explore.

Horticultural Department.

The Vegetable Garden.

Ordinarily this month is too hot to allow of much work in the garden, beyond the pulling and drying of onions, transplanting cabbages, egg-plants, and tomatoes, for fall consumption, and keeping thinned and clean the vegetables already in the ground.

Irish potatoes should be dug and put away, care being taken not to expose them for a minute to the hot sun. If they are so exposed they will certainly rot. They should be spread out

thinly on a dry cellar floor, or under a house where the sun is excluded.

Towards the end of this month, the earlier kinds of Irish potatoes, which were dug last month, can be replanted, and if planted in good soil will make a good crop before frost. Mulching the ground heavily after a rain will be found a great benefit in raising this second crop.

Snapbeans, corn, tomatoes may be planted still on the ground from which the early crops have been removed. With a little care and diligence a good and abundant supply of fall vegetables can be obtained.

Cabbages for winter use should now be sown. When the plants are large enough to transplant set them out in trenches, three feet apart, seven or eight inches deep, with abundance of well rotted manure in the bottom of them. As the plants grow draw the soil to them as to celery until the ground is level.

English peas, planted this month, frequently yield a good crop. Not long ago we read in some horticultural work, the name of which we are unable to recall, that the best way to plant English peas this month is to plant them under straw—sow the peas in drills 12 or 15 inches apart and cover the whole with straw a foot thick. The peas will come through the straw without any difficulty, and will yield a large crop.

Sprinkle a mixture of salt, ashes and soot over cabbages and cauliflowers, while the dew is on them, in the morning, as a preventive against bugs and worms. Plant cucumbers and melons for pickling. Top the okra, allow none of the pods to open on the stalk, except those reserved for seed.

Gather pot, sweet and medicinal herbs when in bloom, dry them in the shade and put away in paper bags for winter use.

If the month be dry and hot, mulch all growing vegetables as far as possible. The increased production will amply repay the labor.

The Flower Garden.

Keep the beds free from weeds and grass. Stir the soil lightly with a fine rake, and scrape away all grass from the walks. Top the dahlias to make them bushy, and tie them securely to stakes. If topped after they have ceased to bloom, they may flower again on the fresh growth which they will make. Take up bulbous roots, dry them in the shade and put away to set out again in October. Cut off the decayed flowers of roses and other flowering plants and shrubs. Remove annuals which have gone out of flower, and the seed stalks of perennials.

Roses may now be budded and layered. Verbenas and petunias and climbing plants, like Wisteria, may also be layered. The Chinese Wisteria grows freely from cuttings, but the cuttings will never bloom. Those propagated from layers will alone bear flowers. Water the flower garden in the evening after the sun has gone down. Keep the grass of the lawn closely mown.

The Orchard.

The heavily laden branches of all fruit trees should be relieved of a portion of their burden by thinning the fruit and removing all that is defective.

Fruits as they ripen should be gathered immediately. Pears should be picked before they become thoroughly ripe and placed on a shelf in a dark closet where they will ripen thoroughly and preserve their full flavor. This precaution is particularly necessary in the case of Jargonelles and Bartlett's, which if allowed to ripen on the tree, will be found to be rotten at the core. Remove carefully all suckers, pinch the ends of too luxuriant shoots, and in case the tree is growing out of shape, prune *moderately*.

Keep strawberries free from runners, except those which are wanted to make new beds. Cut away the old cane of raspberry bushes, leaving but four or five shoots to each stool. Now is the time to catch the borers before they lay their eggs in the bark near the ground. It is said that a little guano strewn close to the base of the tree will prevent them from entering the ground to lay their eggs, and others recommend as a preventive, to wrap the stem of the tree with brown paper to the height of a foot from the ground. Worms, borers, bugs and aphides of every kind which prey upon fruit trees should now be pursued and exterminated. A few hours spent in waging this war now, will ensure healthy trees and good fruit next year. It is recommended to wash the stems of apple trees, in dry weather, with ashes and water or brine, to protect them against the borer.

For the Southern Farm and Home.

Lawns.

BY THE LATE WM. N. WHITE.

If your lawn is formed of Bermuda grass, the hardiest trees and shrubs should be selected if any are to be planted on the lawn, and the trees ought to have a year or two of growth before the grass is set. If planted on existing lawns a circle round them not less than six feet in diameter, must be kept free from grass. Ever-

greens in particular, will make no growth, and indeed will almost certainly die, if planted in turf without being set in a good bed of prepared soil, and the grass kept away from them for a few years. Bermuda may be planted like the blue grass turf, but spreads more rapidly. Of blue grass seed there should be sown at the rate of not less than one bushel per acre, and of white clover six pounds.

After its formation, the satisfaction to be derived from the lawn depends upon its keeping. The best English and Northern lawns are kept in their lovely green condition by being mown through the season of growth, as often as once every eight or ten days. They are also frequently rolled, and these two operations in time, give them the smoothness and elasticity so much valued.

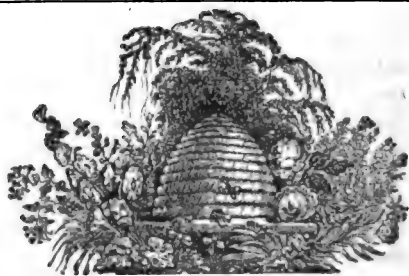
In this country, if the grass be allowed to grow up five or six inches and then is mown, in summer the effect will be, unless mowing happens to precede a long storm, that the grass will die out in patches, and weeds will take its place. Bermuda grass is of course in no danger of being destroyed by mowing or anything short of digging up the roots and burning; but with the other grasses, if mowing has been neglected at the proper season, it is better to let the crop remain through the summer to protect and shade the roots from the sun. The roots must be kept hardy by constant exposure to solar influences, from frequent mowings made before the grass is high, or else the mowing must be entirely dispensed with, and the grass left to shield the roots from the summer sun, and as a mulch in the fall, to protect them from the frost. In either of these methods the grass will do well, though in small plats, to mow frequently gives the most satisfactory effect. Mowing when the grass is high, and exposing the roots to our burning sun will ruin any lawn except of Bermuda grass.

Lawns should receive an annual coat of manure. Well rotted stable manure, composted with leaf-mould, is the best, but when not obtainable, bone dust or manipulated guano is a good substitute. Ashes or lime is a useful application once in three or four years, where the soil is not calcareous.

A good portion of the lawn should be left uncovered with trees, to admit circulation, give breadth of light, and show the forms of the groups and mosses of the trees.

Do not lay out too many walks for even the least expensive will be troublesome to keep in order; better trust to the smooth green turf.

Scott's walks at Abbotsford were grassy foot-paths. Do not ornament your lawn with too many fountains, vases, etc. There is no necessity for extravagance. All that is wanted is the simple and natural, and this may be secured by employing only trees and grass. Good order is far more beautiful than a confusion of vases, statues, etc., and rural bedlams, mixed jumbles of discordant forms, materials, ornaments, and decorations, are utterly unsatisfactory.



THE APIARY.

JULY.

To secure the greatest quantity of pure white combs, remove the honey boxes as fast as filled.

Near sunset remove the cap and raise the end of a box just enough to blow under a little smoke, when the bees will leave the holes, which may be covered with blocks or an empty box turned bottom up. Set the full boxes right side up on strips upon the stand, so that they shall be three-eighths of an inch from the board and five or six inches from the entrance of the hive. Gently rap upon the boxes until the bees begin in earnest to leave for the hive. Being filled with honey there is no danger of their stinging from the rough treatment received. The humming of those that enter will give notice to the others of their position near their home. Should some remain in the boxes they may be left till morning if the weather be pleasant, but must be removed early lest the bees commence carrying the honey into the hive. If preferred boxes may be placed upon their sides in a tight box or barrel, and a thin cloth thrown over the top. Seeing the light the bees will creep up on the cloth, and if this be turned over occasionally all except a few young ones will find their way back to the hive. Late in the season, when the nights are cool, if the cap be raised in the evening, the boxes will usually be clear of bees by morning. As soon as the flowers have failed or the bees commence carrying down honey from the unsealed cells, all boxes should be removed, unless, as is sometimes the case, when the latter part of the season has been unfavorable, an insufficient supply has been stored in the body of the hive. In this case not only allow the bees to remove the honey from the unsealed cells, but shave the caps from the others, when all will be carried below.

A few days' neglect may greatly reduce the amount of surplus. To induce the bees to

commence quickly in the second set of boxes, put in large guide combs or elevate the full boxes. After removing honey from the hive keep it in a dry cool place. If kept in a damp cellar it becomes thin and sometimes sours. The boxes should stand the same side up that they did on the hive, with paper or cloth pasted over the holes to exclude insects. Aid weak colonies by killing all worms found about them, and strengthen them by occasionally exchanging with a strong stock for a comb of brood nearly mature. Should the yield of honey be very great, a populous colony will frequently store its combs so full as almost to put a stop to breeding, when the bees will cluster idly about the entrance. They may be aroused to action by giving them an empty frame, or frames of empty comb placed near the centre of the hive, by removing the others outward. See that the hives are shaded from the sun.—*Bee-keeper's Text Book.*

The Best Beehive.

Several letters have recently been received inquiring for some non-patented movable comb-hive suited to the needs of progressive bee-keepers. Although I shall not give a detailed description, measurement, etc., I will endeavor to present a general idea of the hive I have recently adopted, and am now using. I invented it to meet my own necessities, and as I did not expect to make anything by its sale or general introduction, I have not taken any special pains to make its merits known. However, I am willing to give all a chance to become acquainted with it. I consider it free from any patent or claims of infringement. The prevailing idea of the hive, as I use it, is to make it a non-swarm, and secure the largest amount of surplus honey in the best shape for market. The first of these considerations has long occupied my attention; for until swarming is fully controlled, results must be more or less uncertain. This point has been attained by the use of a device, called a queen-yard, made as follows: Nail together strips of boards to make a box 18 or 20 inches square, by 3 or 4 inches deep, with a floor of thin boards, except a strip 4 inches wide, which should be of wire-cloth, for sifting out dirt, and for ventilation. Fasten strips of tin 2 inches wide, around the inside at the top, parallel to the floor; and make an opening in the side next to the wire-cloth, in the floor, corresponding to the entrance of the hive. Paint the upper side of the tin some light color. In swarming-time place this yard in front of the hive. Previously examine the hive, and clip the wing of the queen. When a swarm is disposed to issue, all the bees are obliged to pass through this yard, and the queen, being unable to fly, or crawl over the projecting tins, will return to the hive where the bees will soon follow her. To prevent their raising a young queen which can fly, the hive must be opened, and all queen cells cut out once a week, unless it is desirable to supersede the old queen, in which case *one* cell may be left; and after she has hatched and commenced laying, which will be in about ten days, find her and clip her wing as

above directed. The old queen should be removed just before the young one hatches. The inside of the hive is simple, consisting of eight movable frames, supported by a device which clears them from any patent. The frames are 11 by 18 inches, inside measurement, and are held in place by a piece of hoop-iron fastened on the outside of one of the end pieces, near the bottom, and bent at a right angle to project under the end of the frame about $\frac{1}{4}$ inch, to form a sort of hook. There should be space enough between the hook and end of frame, to allow it to slip over a piece of hoop-iron, fastened across the bottom board of the hive, which has a slight channel cut under it to give requisite room. One end of each frame being thus secured, they remain perpendicular, and are kept at right distance from each other— $\frac{1}{4}$ inch—by nails partially driven in the sides of the frames. There are various other items in the construction, such as ventilators, etc., which I cannot take room to describe. At the sides and top of these frames, there is space enough to place surplus boxes of over 100 lbs. capacity, holding from 2 $\frac{1}{2}$ to 4 lbs. each. Top boxes are placed directly on the frames; side boxes with the partially open ends, against the main combs. If the honey is designed for home consumption, extra frames may be used instead of boxes. A large box, which is joined at the corners with hooks, encloses the whole, and can be readily opened at any time. The space devoted to boxes in summer can be filled with dry hay or straw, and the hives remain safely on the summer stand during winter. Those who prefer to increase their colonies by natural or artificial swarming, to securing large amounts of surplus honey, can use these frames to advantage by omitting the extra space designed for boxes, and enclosing with a box just large enough to accommodate the frames, leaving sufficient room to prevent the bees from waxing the outside combs fast to the hive.

Household Department.

For the Southern Farm and Home.

Domestic Receipts.

BY MRS. WM. N. WHITE.

VEAL CAKE.—Take cold roast veal and cut the white meat into thin slices; have also a few thin slices of cold ham, and two or three hard-boiled eggs, which also slice, and two tablespoonfuls of finely chopped parsley. Take an earthenware mold and lay veal, ham, eggs and parsley in alternate layers with a little pepper, and a sprinkling of lemon on the veal. When the mold seems full fill up with strong stock and bake half an hour. Turn out when cold and garnish with sprigs of parsley.

EGGS AND POTATOES.—Remove the skins from boiled Irish potatoes, and when perfectly cold, cut them up in small pieces about the size of a

grain of corn, and season with salt and pepper. To a quart of potatoes thus prepared take the yolks and white of six eggs, beat them well together. Put some butter into the frying pan, and when it is melted, put in the potatoes. When they are quite hot stir in the eggs, and continue stirring so as to mix them well with the potatoes, and until the eggs are set, then pepper and send them to table in a hot dish.

A BREAKFAST DISH.—Slice a few cold biscuits, or dry light bread, fry them slightly, in a little butter or nice gravy. Beat three or four eggs with half a teacupful of new milk, and a pinch of salt. When the bread is hot, pour the eggs over it and cover for a few minutes, stir lightly so that all the eggs may be cooked. Serve hot.

ANOTHER.—Take stale bread, chop the same as for dressed fowl. Pour on some boiling water and let it stand for a short time. Then season it with butter, pepper, salt and sage, the same as for dressing. Add two eggs, and beat the whole hard; then pack it down in a baking dish, adding a little nice gravy, and let it remain in the oven half an hour, but not where it will burn.

HORSE RADISH SAUCE.—One tablespoonful of horse-radish grated, one teaspoonful of made mustard, one teaspoonful of pounded sugar, four tablespoonfuls of vinegar. Mix all together until well blended. With cold meat the sauce is a good substitute for pickles, giving a fine relish.

GREEN TOMATO PICKLES.—Peel, and slice two gallons of green tomatoes, put them into a jar with a sprinkling of salt between each layer; let them stand twenty-four hours, then drain off all the water, and put them into a porcelain preserving kettle, with five tablespoonfuls of ground mustard, and one gill of whole mustard seed, two spoonfuls of ground cinnamon, one of cloves, one pound of brown sugar, and two quarts of good cider vinegar, also add a little celery if you have it. A little onion or garlic is thought by many to be a great improvement. Boil all together till quite done. They are pronounced good by all.

TOMATO SWEET PICKLE.—Take nine pounds of ripe tomatoes, (scalded and skinned) three pounds of brown sugar, and three pints of good cider vinegar; put the whole into a preserving kettle with the addition of two ounces of cinnamon, and two of cloves, all tied in a little bag. Set them on a moderate fire, stirring them frequently, to prevent them from sticking to the kettle, until they are sufficiently cooked to keep well.

Ripe, soft peaches, or plums, also pears, and quinces, make very nice sweet pickles put up in this way.

CHERRY PUDDING.—Take two teacupfuls of butter-milk, three eggs, two cups of pitted cherries, a small teaspoon of soda, and a little salt, stir the mixture well, and thicken with wheat flour to a stiff batter, then put it into a linen bag, and place at once in a pot of boiling water, and boil steadily two and a half hours. Serve up hot, with sweet cream sauce, or butter and sugar sauce.

SQUASH.—Steam them whole one hour, then mash and set on the stove until dry, and season with butter, pepper, salt and sweet cream.

CANNED PEACHES.—Select the largest, finest peaches of one kind, let them be ripe, but firm; take off the skins, half, and take out the pits. The preserving kettle with a little water, and from a quarter to a third of a pound of sugar to a pound of fruit, should be placed upon the fire; let the sugar dissolve and come to a boil, skim off all impurities, and then put in the peaches, stir them gently till they boil. The fruit should be thoroughly heated through, and put into the cans while boiling. While your fruit is coming to a boil, set your glass cans into a kettle of warm water, gradually increase the heat, and let them stand in the hot water while filling them. Shake the cans while filling, to break all air bubbles. After filling one bottle as full as will allow the cork to fit in nicely, immediately cork, and seal it. Care should be taken to cover the cork and rim of the bottle, entirely with wax, so that there will be no space between the cork and the bottle, press it down tight. If the wax blisters at all, dip it in again, till it is firm and smooth; be careful that every air-hole is effectually stopped, as upon this depends success, more than upon anything else. Keep in a cool place. It is well to examine them occasionally, and if any show signs of fermenting, give them another boil up, and seal as before. Canned fruits, if properly prepared, add greatly to our table luxuries, during the fruitless months.

BLACK REVIVER.—Faded black coats, dresses, etc., can be renewed by sponging with the following compound: logwood, green vitriol, iron filings and sumach; take an ounce of each, of gall, eight ounces, steep in a quart of vinegar.

MEASURE CAKE.—Stir to a cream one teacup of butter, two of sugar; then stir in four eggs beaten to a froth, a grated nutmeg, and a pint of flour; stir it until just before it is baked. Bake in cups, or pans as is most convenient.

The Southern Farm and Home.

MACON, GA., JULY, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - Editor.

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We gratefully acknowledge the courtesy of Hon. HORACE CAPRON, in sending us copies of the report of the Agricultural Department for March and April.

OUR THANKS are due to the Southern Express Company for many courtesies extended to the SOUTHERN FARM AND HOME, and especially to the obliging and attentive agent at Athens, Capt. W. Williams, and the always prompt and obliging agent at Macon, Mr. W. Hulbert.

THE officers of the Cotton States and Mechanics' and Agricultural Fair Association, of Augusta, Ga., have our thanks for a copy of their premium list. They offer eleven thousand dollars in premiums, and their schedule embraces almost every article in agriculture, mechanics and domestic economy. The Fair will take place on October 25th, and will continue five days.

MR. STEPHENS' CONSTITUTIONAL VIEW OF THE WAR BETWEEN THE STATES.—We offer our thanks to the distinguished author of this work for a copy of the second volume which has recently issued from the press and has only just reached us. Not having had time to examine the book with the careful study its importance demands, we must defer notice of it to our next number. We regret to learn that Mr. Stephens is still in very feeble health.

NEW MEDICAL JOURNAL.—Dr. Abram Love, of Albany, Ga., has sent us a "prospective circular" of a new medical periodical, which he proposes to publish monthly, called "the Cotton Zone, Central Journal of Medicine." Dr. Love will be assisted by Dr. R. Battey, of Rome, and Dr. J. P. Logan, of Atlanta, Ga., and many other medical men of acknowledged prominence.

VOL. 1.—24.

We offer our thanks to our valued friend, Hon. SAM. F. BUTTERWORTH, of San Francisco, Cal., President of the Almaden Quicksilver Mining Co. for a copy of the Weekly *Alta Californian*, containing several pages of most valuable information concerning the resources, agricultural and mineral, of the State of California, and amongst others an excellent essay by John S. Hittell, written for the California Immigrant Union, and a paper on the Geography of the State, from the pen of Professor Knowlton, both of which contain a mass of useful and instructive matter for all who contemplate migrating to the golden State.

When we remember that it is but a few years since this region was inhabited only by a few Mexicans, with all its treasures unknown and valueless to humanity, we are astounded by the progress which Anglo-Saxon courage, skill, perseverance and enterprise have made.

We learn from this paper that the annual value of the agricultural productions of California is upwards of \$89,000,000; annual production of precious metals, \$23,000,000; annual value of manufactures, \$75,000,000. The average yield of wheat per acre (one fourth of the arable land is devoted to this crop) is estimated at 30 bushels, while in many instances 70 and 80 bushels have been grown.

The State has 25,000,000 grape vines, producing annually, 4,000,000 gallons of wine and 300,000 gallons of brandy, paying the owners of the vineyards from \$200 to \$2,500 per acre.

The production of wool for 1869, was 18,000,000 lbs.

We shall have occasion again to refer to this interesting paper, and when our space will permit, intend to make several extracts concerning agricultural matters.

CULTIVATION OF OPIUM.—Our friend, E. W. ALLEN, of Dover, Ga., believing that the poppy can be successfully cultivated in Georgia, and stimulated by the present high prices of opium, has purchased seed, and made an experiment on a small scale, the result of which he promises to communicate to the FARM AND HOME. We wish him abundant success.

BRIEF AND TO THE POINT.—The Massachusetts Medical Society offered a prize of \$50 for the best essay on the best way of ventilating sick rooms at the least expense and with least difficulty. One of the competitors offered the following: "Pull down the upper window sash and leave the fireplace open." The writer deserves the prize.

The Farm and Home Prizes.

The various original stories and poems, relating to rural life which have been sent us as competing for the prizes offered by the publishers of the FARM and HOME, were submitted, the names of the authors being withheld, to a committee of three gentlemen of learning, taste and high social standing, to decide which were entitled to the prizes. The Committee met on the 10th and 11th of June, read and examined most carefully all the manuscripts, and after much deliberation, decided that the prize of fifty dollars in money or books for "the best tale of Agricultural and Rural life," should be given to the writer of "The Wrong Phial and its Consequences," and that the prize for the best poem should be awarded to the writer of "King Cotton."

Mr. FRANK A. NISBET, of Oswichee, Ala., is the fortunate winner of both prizes.

The unsuccessful competitors will of course feel some disappointment. It may be some consolation to them to know that the Committee had considerable difficulty in coming to a conclusion, and that as between the winning story and poem and many of the others, the three learned judges had to use both their mental and physical spectacles before they could decide how the balance inclined, and we can well appreciate their perplexity, because it would have troubled us sorely had we been called upon to decide.

We offer our sincere congratulations to the winner and propose to publish "The Wrong Phial" and "King Cotton," in our next number.

THE HANDY BOOK OF HUSBANDRY.—The publishing house of E. B. TREAT & Co., New York, has sent us advance sheets of a new agricultural work, by GEORGE E. WARING, Jr., of Ogdon Farm, the well known author of "Elements of Agriculture," "Draining for Profit and for Health," "Earth Closets and Earth Sewage," and formerly Agricultural Engineer of the Central Park of New York.

This work is entitled the *Handy Book of Husbandry*, will contain 600 pages handsomely and liberally illustrated, and from the few pages we have read, we are enabled to predict that it will be a comprehensive, well digested, eminently practical, and valuable book.

It will contain information in regard to buying or leasing a farm, how to commence operations, fences and farm buildings, drainage, plowing and subsoiling, manures, rotation of crops,

stock of all sorts, and their management and medical treatment, dairy management, and many other things of importance to the farmer and gardener.

The book will soon be published, and will be sold only by subscription.

The Publishers desire to employ agents every where to obtain subscriptions.

The University of Georgia.

We acknowledge with thanks the receipt of a catalogue of the University of Georgia, for the year 1870, and sincerely rejoice to learn from it that this admirable educational institution is so prosperous and well supported.

We have always thought that one of the greatest damages done by the war was the interruption of the education of the young men who left the academic halls for the field. We have been delighted to see that these young men have themselves endeavored to repair the loss by resuming their studies, and that sophomores, freshmen and juniors, who laid aside their books to take up the musket, have, after four years of devotion to their country, many of them with empty sleeves, and bearing other honorable marks of faithful service, resumed as men, the course of education which they abandoned as boys, and that having fulfilled every requirement of military duty in time of war, they have striven to fit themselves to discharge their civil duty in time of peace.

We do not know of any College on the American continent which offers educational advantages superior to those of the University of Georgia, either in its organization and discipline, or in the character and qualifications of those entrusted with its administration.

According to its present organization, the University embraces the Preparatory Department, the Academic Department and the Professional School. Provision is made for six different degrees, namely, Bachelor of Arts, Bachelor of Science, Mechanical Engineer, Civil Engineer, Bachelor of Law and Master of Arts.

All the schools of the University are elective to students over seventeen years of age, that is, they may select any which they desire or may consider best suited to the calling they propose to follow. A certificate of proficiency will be given to a student in each school when he has completed the course of study in that school, and the degrees above mentioned are to be awarded when the requisite number of certificates is obtained.

The University thus presents "different types of culture" adapted to the present age. She has greatly enlarged her sphere, and is now prepared to advance scholarship far beyond anything ever before known in Georgia. Young men who now take the degree of Bachelor of Arts, as at other Colleges, may repair to the University to complete their education by becoming candidates for the degree of Master of Arts or for a professional degree.

There will be no conflict between our colleges and our State University. The object of the University will be to perform an educational work supplementary to and of a higher grade than will come within the scope of our colleges, which indeed do the work now—though in some instances classed under the high sounding name of Universities—of the German *Gymnasias*.

The step taken by the Trustees in this reorganization is the right one to elevate scholarship and build up a great State University in the success of which every true Georgian must heartily rejoice.

ASPARAGUS CULTURE.—Our esteemed friend and fellow citizen, SAM. I. GUSTIN, Esq., whose success this season in the culture of Asparagus, can be well attested by those who have tasted his delicious "Colossal" Asparagus, has kindly promised to furnish us at an early day a paper upon the culture of this vegetable, which like everything from Mr. Gustin's pen, will be interesting and instructive.

We learn that the Asparagus sent this spring to the New York market, by Mr. Gustin, was considered the finest and best, as it was the earliest that was furnished to the nabobs of Gotham.

DR. J. DICKSON SMITH, the editor of Mr. David Dickson's work on Practical Farming, has promised to reply through the columns of the FARM AND HOME, to Mr. Gustin's communication which was published in our number for June.

We cheerfully surrender the space for Dr. Smith's communication. The subject in controversy between the Doctor and Mr. Gustin is one of vast importance, and its discussion by men of enlightenment and scientific acquirement cannot fail to be of profit to agriculturists generally.

AN EDITOR of a paper in Missouri alluding to a State of the Union, which has produced Plymouth Rock, Cape Cod, the Bunker Hill monument, Boston Common, Charles Sumner, and

B. Butler, calls that favored Commonwealth *Nastichusetts*. This editor clearly needs reconstruction, or the 15th Amendment, or something of that kind.

THE SOUTHERN EXPRESS COMPANY have established an Express Freight line between New York, Philadelphia and Baltimore, to all points South, which will be of great advantage to our people.

The subjoined paragraph from the circular of Capt. O'Brien, the Genl. Supt. of the Southern Express Co., will explain the purpose and advantages of the new line.

"The necessarily high rates for the transportation of heavy freight by passenger trains, and time required for its carriage by the ordinary freight lines, has suggested the importance of an intermediate channel through which commercial intercourse between the North and the South may flow, and thus afford the mercantile community a medium, combining the advantages of a lower rate than is charged by Express, and yet quicker transportation than is afforded by regular Freight and Steamer Lines.

"Recognizing this great want of the public, the Southern Express Company, in conjunction with Adams' Express Company, has arranged an Express Freight Line, from New York, Philadelphia and Baltimore, through which facilities are offered for the quick transportation of heavy freight by Express Freight Train, making the time an average between 'Express' and regular Freight or Steamer lines and a great reduction from Express rates."

The Death of Charles Dickens.

Since the death of Walter Scott, the literary world has sustained no such loss as that of CHARLES DICKENS. When the telegraph announced that the author of the Pickwick Papers, of the Old Curiosity Shop, of David Copperfield, was dead, who that has read these inimitable works, did not feel as if he had lost a valued friend who had often comforted him when he felt depressed, who had cheered him when he was sick, and who had gladdened him when he felt weary or lonely.

Dickens was essentially the novelist of the middle and lower ranks of English life. It was from them that he drew most of his characters, and it was to the study of their lives, habits, customs and peculiarities that he principally devoted himself. Hence his popularity, for as a popular writer he had no rival. In all his stories his chief aim was to make the rich and the fortu-

nate acquainted with the sorrows, privations and temptations of the poor and friendless. He was the relentless foe of all humbug and pretence, and the consistent friend and advocate of truth and fact. He had the most inexhaustibly fertile imagination of which we have any knowledge. His characters, and the scenes by which they were surrounded, live and move on the pages of his works as if they were really standing before us. Throughout each and every mood of the domestic instincts he had a master knowledge, which enabled him to draw pictures of the inner life of the people which will be prized so long as the English language shall endure. As a comic writer he had no equal. Some of his characters may justly be considered caricatures, unlike anything that ever existed. But in our admiration of the matchless fidelity of his delineations we forget to inquire whether they are natural. We may never have known such a servant as Sam Weller, such a remarkable believer in the absolute necessity of "being jolly under adverse circumstances," as Mark Tapley, such a hopeful believer that "something will turn up," as Micawber, such a sapient lunatic as Mr. Dick, but we admire the conceptions and laugh at their idiosyncrasies without stopping to investigate how they came to be developed. And then when he sought to sound the emotional depths of our nature, when pathos guided his pen, no modern novelist has ever surpassed him. The story of the death of little Nell in the Old Curiosity Shop, excels in tenderness, in pathetic beauty, and in unaffected sentiment, anything we have ever read in any language. We do not envy the man or woman who can read without emotion, that simple narrative of the deathbed scene, how in silence and solitude the spirit of the angelic child took its flight homeward, leaving the poor imbecile old man dimly conscious of his bereavement.

Throughout all his writings there breathed a spirit of good will among men, of brotherly love, of the duty to do to others as you would that others should do to you. His heart was brimful of sympathy with the whole human race, and the great leading purpose of all his works, was to improve his fellowmen, to make them better, more truthful, more honest, more generous and more charitable.

These works will live after him, and so will the great good which he has done.

Dickens was born on the 7th February, 1812, and died of paralysis near London on the 9th of June 1870.

Georgia State Agricultural Society.

We are indebted to Hon. David W. Lewis, for a pamphlet copy of the Premium list of the Society for the Fair to be held at Atlanta next October.

Premiums to the amount of \$15,000 are offered, embracing almost everything valuable in Agriculture, Mechanical Industry, Art, Science and Taste.

We regret that our space will not allow us to copy the list this month. We will give that portion which relates to field crops in a future number.

Answers to Correspondents of Farm and Home

BUGS ON MELONS AND CUCUMBERS.—J. H., writing from Baldwin co., says his watermelon and cucumber vines are suffering from bugs and insects, and asks us for a remedy.

We know nothing better than to dust the vines early in the morning while the dew is on them, with a mixture of fresh ashes, soot, and salt. A writer in the *American Agriculturist*, says that a tomato plant set in the centre of the melon or cucumber hill "will effectually keep off" striped bugs and insects of all kinds, the tomato to be cut away when the vines blossom.

LICE ON COTTON.—A subscriber in Walton co., writes that since he has put his cotton to a stand it looks sickly—that he finds the cause is that it is attacked by lice, and asks what he should do.

We know of no practicable remedy; but perhaps, as a "recent exchange" frequently says, some of our subscribers will confer a favor by communicating the desired information.

HOME MADE DISSOLVED BONES.—A subscriber in Houston co., inquires how he can best, and most economically prepare dissolved bones for manure, on his own plantation, so as to be independent of the fertilizer manufacturers.

We have fortunately at hand a method of preparing bones for manure, prescribed by Dr. J. F. Hodges, in the *Mark Lane Express*, which is as follows:

"Place in a wooden trough or tub, the bones broken into as small pieces as possible, and pour upon them one-third of their weight of boiling water, and having steamed the mass so as to render the bones completely moist, add one-third of the weight of the bones of sulphuric acid and common vitriol of the bleacher, and mix the materials completely, by stirring them by means of a wooden shovel or old spade. The mixture may be conveniently made into an old sugar hoghead, and should be allowed to

remain some weeks previous to being used. It may be mixed, if necessary, with dry peat, mould or real charcoal, or with sawdust; but lime should not be added to it. By carefully following these directions, the farmer may obtain a compound of high fertilizing value, and much superior to many of the specimens of dissolved bones offered for sale. The addition of slacked lime and soap boilers' refuse, which some persons occasionally use, should be avoided. By employing the bones as described, the manure will be found to contain a large amount of soluble phosphate, which very few of the advertised manures afford."

THINNING BRANCHES OF FRUIT TREES.—We are asked to give our advice as to the proper time for thinning the branches of Fruit Trees, and to what extent they should be thinned. Where there are any superfluous, too luxuriant, or ill-placed shoots, they may be pruned now, but large limbs should not be cut. We are not in favor of much "summer pruning." While a fruit tree is quite young it is well to cut into shape, so as to give it a good head, but after it attains four or five years' growth, we think it much better to allow nature to take its course.

If a tree is left undisturbed by knife or pruning scissors, the inside of the head will shade its own buds and it will soon be as "thin" as is desirable. Summer pruning necessarily checks the growth, and if not very sparing, often gives trees a "back set" from which it takes them a long time to recover.

NOVICE asks: Is there a species of Rye that is beardless. If so where can the seed be had? We do not know of any beardless rye in America.

TRANSPLANTING FRUIT TREES.—Tyro asks which is the best month to transplant fruit trees. We prefer March; but many think November and the early part of December the best time.

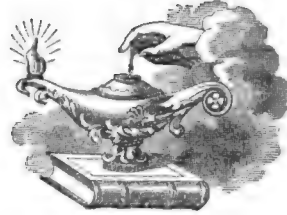
WILL POTATOES HYBRIDIZE?—Is a question just put to us by a subscriber. The books say that they will not; that different sorts may be planted in the same hill, and each preserve its distinctive qualities.

TO KEEP POMATUM SWEET.—A lady correspondent wants to know what will prevent home-made pomatum from becoming rancid. It is said that fluid bi-sulphite of lime, (one drachm to a pound of pomatum) will keep it perfectly sweet for a long time.

J. G. GIBSON, EATONTON, GA., asks, what is the best work on Bee Culture, and where published? The Illustrated Bee Journal, (N. C. Mitchell, Indianapolis,) Quinby's Bee Notes

in the American Agriculturist, New York, and the Bee-keeper's Text Book, published by H. A. King & Co., New York.

Literary Department.



EDITOR'S BOOK TABLE.

We are indebted to the Publishers, J. W. Burke & Co., Macon, for a copy of *Practical Farming*, by DAVID DICKSON, of Hancock co.

The agricultural public, and all who are interested in agriculture owe a debt of gratitude to Mr. Dickson and the editor of the volume, for having published it. Its teachings are plain and simple, yet sufficiently full, minute without being tiresome, practical without being commonplace, forcible without being dogmatic.

The work is made up of the experience, opinions and practice of one of the most successful of the planters of Georgia, upon almost every subject on which a Southern farmer desires information. The chapters on manures, their relative value, the best mode of applying them; the preparation, use and benefit of composts; the object, time, and mode of breaking and subsoiling land, and the plows most suitable for the purpose, and on the means of improving our lands by rotation of crops, deep plowing, subsoiling, manuring, and turning under vegetable matter, are of great interest.

The headings of the chapter that commences at page 92, constitute the best compendium of the whole duty of a Southern planter, that could be written. They are: "Let us be independent. Pay Cash. Keep Cash Capital. Save the Profits. Export Cotton. MAKE SUPPLIES. Encourage Manufactories. Increase the Price of Cotton."

At page 98 we find the following wise counsel which it would have been well had our planting friends heeded this year: "Cotton does the best in this latitude, but to continue to make it pay, the cotton planter should make his whole supplies, corn, cotton, meat and everything necessary to run the farm; then the balance of the labor will make more money than if the whole labor

was engaged in making cotton, by the increased price of the cotton. What corn you wish to use at home, you should not count the cost of making, but make it, and you will be remunerated in the increased price of cotton."

We recommend this book to the attentive perusal of every body who follows agriculture, whether on a large or small scale. It is the best book extant on the subjects of which it treats; and as the soundness of its teachings has been proved by that best of tests—success—we need not fear to reduce them to practice.

The typographical execution, the binding, and general "make up" of the book are admirable—equal to the best work of the best northern publishers, and superior to that of nine-tenths of the books which daily issue from the press. The volume contains a steel plate engraving of Mr. Dickson, which is said to be a very perfect likeness.

The present edition is bound in three styles of binding, cloth, half morocco, and full calf, and is sold by J. W. Burke & Co., Macon, who desire to employ first class agents for its sale in every part of the South, to whom liberal commissions will be paid.

No work that has appeared during the last quarter of a century has created a greater sensation, been more anxiously looked for, or more generally read in the English reading literary world than *Lothair*, by the Right Honorable B. Disraeli. (D. Appleton & Co., for sale by J. W. Burke & Co.) The great fame which the author achieved in former years as a writer of works of fiction; the eminence which he has gained as a statesman, orator and member of the British Parliament, and the fact that it was known that in *Lothair* many of the characters are drawn from life and intended to represent personages well known in fashionable and political life in Europe, contributed to make the publication of the book an event in the literary world and to cause 60,000 copies to be sold in a few days after its first appearance.

Had *Lothair* been published without the name of the author, its parentage would have been immediately recognized. Nobody who has read "Coningsby," "The Young Duke" and "Tancred," could fail to recognize the relationship. In character-painting with a few strokes of the pen, in terse, biting epigram, and in refined wit, there is no novelist of the present day who can equal Disraeli. In description of aristocratic society in England he is without a rival. His portraits are all masterpieces, both as faithful likenesses and as works of art. In *Lothair*,

many of these portraits are easily recognizable. The hero is evidently intended for the young Marquis of Bute. Cardinal Grandison represents Cardinal Manning, and the "Oxford professor is so well understood to stand for Mr. Goldwin Smith, one of the teachers of the Cornell University, that Mr. Smith, enraged by the too scrupulous fidelity of the likeness, has written a very insulting and very silly letter to Mr. Disraeli.

As a novel, artistically speaking, *Lothair* has little or no merit. The story is simple and altogether improbable, and where it tells of Garibaldian conspiracies in Italy, of priestly machinations to make *Lothair* embrace the Roman Catholic religion, and of Fenian schemes, it is absolutely dull to prosiness. The sketches of Cardinal Grandison, of Putney Giles, the solicitor, and his wife Appollonia, "niece of an Irish peer," of Lord St. Aldegonde, of Pinto and of Gaston Phœbus, the artist, are however inimitable. *Lothair* is the least interesting picture of the whole gallery. He is a pragmatistical prig about whom a number of persons, of both sexes make a fuss and put themselves to trouble, vastly out of proportion with any merit that we can discover in him, except it be a merit to be a nobleman of high rank and be immensely rich.

On the whole it must be said that *Lothair* is a brilliant book, everybody will read it, and everybody will do right to read it.

The third volume of the *History of the American Civil War*, by John William Draper, M. D., containing a record of the events from Lincoln's emancipation proclamation down to the surrender of the Confederate armies, has recently been issued from the press of Harper and Brothers. This volume concludes, what the author is pleased to call his "history."

Written by a northern man from an extreme northern point of view, compiled exclusively from northern sources of information and written to suit the taste of the northern public, the southern reader will find little to commend or approve in this, the most elaborate history of the war that has been written. He will find himself and his comrades and his fellow countrymen generally often spoken of as rebels, traitors, murderers, etc., through all the thousands of pages of which the work consists. While the writer affects to be impartial, and desires to be philosophical, he frequently accepts and reissues as truth, all the slanders and exploded falsehoods uttered during the heat of the conflict by the army correspondents of the sen-

sation newspapers of the North, including the stupid fiction of the capture of President Davis in "female attire," with the accessories of the "high top boots," and the "tin pail."

We believe however, that Dr. Draper has tried in this book, to be as moderate and as truthful as he knew how to be. Settling out with the steadfast belief that everything on his own side was just and proper, that his political party was always in the right, and that everything southern was iniquitous, infamous and vile, his conclusions from such premises are drawn, it must be admitted, with a moderation of language which he is almost justifiable in mistaking for philosophy. The truth is, Dr. Draper's great mistake is his having attempted to write what could justly claim to be accepted as a "history" of the war. No man on either side, even though he be far the superior of Dr. Draper in all the qualities which constitute an historian, can possibly write now or for many years to come, an impartial history of the War between the Northern and Southern States. Natural passion, prejudice, sectional pride, the impossibility of obtaining access to full and accurate sources of information, the peculiar political and social inter-relations of the late belligerents; all combine to render it almost impossible for a Northern or a Southern man to write a history of the War. However he may struggle to overcome his prejudices, (Dr. Draper has not exhausted himself by any such effort) he must inevitably lean more or less to the side with which he was identified, and he will inevitably accept as facts the accounts of events which he has derived from heated partisans and excited participants in the conflict. Dr. Draper writes well. His style is good and his language forcible and well chosen. He is a man of a high order of ability, and generally esteemed as a scholar. It is a pity that he attempted to write this work, for, however it may please his countrymen, while still influenced by the animosities and excitement necessarily incident to a prolonged war, the time will come when public opinion having regained reason and cool judgment, will discard these so-called "histories" of the events of 1860-5, and regard them as no more worthy of credit than the ephemeral newspaper letters and articles, which were published during the progress of the war.

We will do Dr. Draper the justice to say, that after examining his three volumes, we can unhesitatingly pronounce them to be the most impartial, least truthless, most honest and least offensive account of the war, which any northern

man has hitherto written, but we cannot help deploring that the author of that really great work, "a history of the Intellectual Development of Europe," which won for him such deserved eminence in the world of letters, should have attempted the impossible task of writing an impartial "History of the American Civil War."

Christianity and Greek Philosophy, or the Relations between Spontaneous and Reflective Thought in Greece and the Positive Teaching of Christ and his Apostles, by B. F. Cocker, D. D., Professor of Moral Philosophy in the University of Michigan, (Harper and Brothers) is an ingenious, in many respects, a remarkable, and a thoroughly readable book. Its aim is to show that the religions and philosophies of the ancient Greeks were not the wicked rebellion against God, which they are frequently represented to have been, but were the "earnest effort of human reason to reconcile the finite and the infinite, the human and the divine, the subject and God," and that God took up all these sincere but mistaken efforts, made them subserve his own plans, and finally advance the purpose of redemption. Dr. Cocker displays no little learning, vast research and patience, and truly remarkable ingenuity in the construction of the foundation on which he builds his speculative theory. There is nothing of rationalism in the book. On the contrary it displays an intense faith in the truth of Christianity, and there can be no doubt that the author is a profound believer in the Christian religion. The book is a very interesting and valuable contribution to theological speculation if not to theological science, and even those who may fail to discover the "relation" between the polytheism of the ancient Greeks and the teaching of Christ, will find much that is original and instructive in Dr. Cocker's work.

Of the novels which have accumulated on our table during the month, the best in style and substance are the *Vicar Bullhampton*, by Anthony Trollope, *Miss Van Kortland*, by the author of "My Daughter Ellinor," and *Beneath the Wheels*, by the author of "Olive Varcoe." All of which are published by the Harpers, and will be found quite worthy of perusal. Miss Van Kortland has many glaring defects, but also many attractive qualities. It is the work of an American author, the story is laid in America, and though, as we have said, in parts it is sadly disappointing, it displays unmistakeable evidence of power, is vigorous in style, and will well sustain the fame which the author of "My Daughter Ellinor," has already won.

The *Vicar of Bullhampton*, like everything that Anthony Trollope has written, has considerable merit, never of a very high order, but of that easy comfortable and unexciting character which is very satisfactory. The purpose of all Trollope's writings is eminently good. He writes firmly and boldly with perfect independence of thought, and is an uncompromising enemy of humbugs. We think that the *Vicar of Bullhampton* is one of the best, if not the best and healthiest of all his works of fiction.

We have only glanced at *Beneath the Wheels*. but what little we have read has induced us to return to it, and we propose to notice it more fully in our next. It strikes us to be a work of decided merit.

The last numbers of that excellent periodical for juvenile readers, "*Burke's Weekly for Boys and Girls*," Major T. A. Burke, Editor, are received. We do not know of any paper for young people that can compare with this. It is incomparably the best we know. The stories written by Southern authors of reputation, are always interesting and morally instructive. Every weekly number is filled with choice and well executed engravings, and every department of the paper displays ability, close and careful attention and a perfect knowledge of what a paper for boys and girls ought to be.

The editor offers as a premium to persons sending him the names of three subscribers—one of them new—with \$6 in money, two beautiful steel engravings, "General Lee at the grave of Stonewall Jackson," and "They strew the Sacred Spot with Flowers," or one of the pictures to any one sending two subscribers—one of them new—and \$4. We are indebted to Major Burke for copies of these beautiful works of art, and can state that by themselves, they are intrinsically worth far more than the money required for them and the copies of the Weekly. Volume IV. begins with July. We earnestly advise our friends to subscribe for it, and get one or two friends to subscribe, and thus besides a good paper obtain one or both of the gems of art to which we have referred.

Harpers Magazine, for June, commences the 41st volume of this valuable periodical. The contents of this number are various and interesting. They are as follows:

Jottings and Journeying in Spain. The Mysteries of a Thunder-shower. Two Moods. Frederick the Great.—VII. The Campaign of Mollwitz. Vanity of Vanities. The Rob Roy on the Jordan. The Hot Current of the Atlantic.—A New Theory of its Fountain and Flood. Transmutation. The Running Turf in

America. Wampunsung Gap. Wine in America and American Wine. Farewell to May. A Story of Six Weeks. Border Reminiscences. By General R. B. Marcy. Anteros. By the Author of "Guy Livingstone," etc. The Gaming-table. Editor's Easy Chair. Editor's Literary Record. Editor's Scientific Record. Editor's Historical Record. Editor's Drawer.

We gratefully acknowledge the receipt from the publishers of the following valuable and esteemed periodicals:

The American Agriculturist, Orange, Judd & Co., Publishers, New York.

The Maryland Farmer, S. Sands, Mills & Co., Baltimore.

The Rural Carolinian, Walker, Evans & Cogswell, Charleston, S. Ca.

The Southern Cultivator, W. & W. L. Jones, Athens, Ga.

The Southern Planter and Farmer, C. B. Williams, Richmond, Va.

The Southland, D. Redmond, N. Orleans, Louisiana.

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Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are enough liberal.

IT IS OUR PURPOSE, in future, to issue the FARM AND HOME on the 1st instead of the 15th of each month, believing that the change will be more satisfactory to our subscribers than the arrangement which has hitherto existed.

VOL. I. No. 10.



THE
SOUTHERN

FARM AND HOME



AUGUST, 1870.
W. M. BROWNE, Editor.



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*THE POSTAGE on the FARM AND HOME is 3 cents a quarter; 12 cents a year

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SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., AUGUST, 1870.

No. 10.



FARM WORK FOR THE MONTH.

During the early part of this month all work in the cultivation of cotton will be completed. It is of great importance that the crop should be "laid by" in a perfectly clean condition, free from grass and weeds, and a very light sweeping by a careful plowman with a steady horse, and a short singletree, will effect this object. But it should not be delayed too long. Where the cotton plants are of rank growth, and almost locked in the rows, it is better to leave the few blades of grass and weeds undisturbed, than to attempt to remove them at the expense of a large number of bolls, forms and blooms which the plow will certainly destroy. There is reason in sweeping cotton as there is in roasting eggs.

By the end of this month cotton picking will have commenced. Every good farmer should see to it now that he has a requisite supply of good baskets and wallets for his pickers, so that when he wants to begin picking he may not be delayed by a lack of these necessary articles. He should see that his gin house in all its departments, is perfectly cleansed and in good order, that his running gear or power is in good working trim, and that the packing screw or press will need no "fixing" when its services are required. Between laying by and cotton picking, is the time to attend to all these important details. The sooner the crop is picked, ginned, packed and sold, after it opens, the better for the producer. "Holding for a rise" is often a delusive, expensive and unsatisfactory proceeding.

VOL. I.—25.

FODDER PULLING

Of all early corn will occupy attention this month. Let it be pulled, cured and stacked, or housed, if possible, without exposure to rain. A stack of fodder cured without rain is worth two that have been soddened and soaked and then dried. Let us save all we can and spare ourselves a repetition of the humiliating as well as ruinous purchase of Northern and Western hay. The forage and provision crops are, we regret to state, small, lamentably small. Let us do what we can to save all there is of them.

TURNIPS

Should be sown this month. We hope that our farmers have prepared well a few acres for this crop as we have already suggested. We copy in another place in this number an excellent article from an old number of the *Southern Agriculturist* upon the way to prepare the ground, sow the seed, and cultivate this valuable, but too much neglected crop. If the land has been prepared in time by frequent plowing and harrowings, and by the liberal application of manure, a five acre field of turnips with one hoeing and one plowing after the seed come up, will readily supply the failure in the corn crop of from eighty to one hundred acres. A thousand bushels per acre can be easily raised. But if, as is too often the case, the farmer's only provision for a turnip crop is a "patch," which is supposed to have been trodden during the summer by a few half-starved cattle, scratched with a scooter, sown broadcast, and then left to "shift for itself," a few spindling, stringy roots are all that may be expected.

Ruta Bagas should have been sown about the 20th of last month. They can be sown yet, however. The rough-leaved varieties should be sown from the 20th to the 30th of this month.

We have just finished sowing a patch near our

residence in Ruta Bagas, having obtained the seed from our enterprising, intelligent, and always reliable young friend, Samuel A. Echols, of Atlanta. When we bedded our cotton land we gave the turnip patch the first plowing, turning under a heavy dressing of stable manure. Each time that we plowed the cotton and corn, we reseeded the turnip patch. Finally, at the last plowing with a Dixie plow, followed in every furrow by a Brinly subsoiler, and after harrowing and cross-harrowing the ground until the soil was perfectly pulverized, the ground was laid off in rows twenty-four to twenty-eight inches apart, about three hundred pounds of Colquitt's "Planter's A No. 1" Superphosphate strewn in the bottom of the drill and bedded exactly as for cotton. The beds were then flattened with a light roller, and sown with a hand drill at the rate of about one pound and a quarter to the acre, and covered lightly. Before each plowing of this patch we thought of the little bales of Northern hay in our barn, bought at \$2 50 per hundred weight, and hauled from the depot, and when we were going to give the final plowing, intending only to subsoil three furrows, in the centre and on each side of the row, we learned that the hay was all gone, and more must be "fetched from the depot." We then ordered that all the patch be subsoiled. Those of our friends who are hesitating about having a good big turnip patch, are earnestly recommended to think of the Northern hay and Western corn they have bought and hauled from the depot, and we hope that when seed-sowing time comes Jim, or Aleck, or Mose will inform them that "the hay and corn is all destroyed," and that they must go to "fetch more from the depot." If that does not stimulate increased care in the preparation of the turnip patch, and cause another order for seed to be sent to Mr. Echols, no power known to mechanics will do so.

We would strongly recommend our farmers to prepare this month a little patch—a few rods square—make it rich, and sow it in yellow or California clover, or in the scarlet clover, known to seedsmen as *Trifolium incarnatum*. By the middle of February this little patch will afford plenty of rich green food for the milk cows. Try it, and if it does not bear out our statement, you can "let it slide."

During this month, on wet days, when other field work is suspended, the stock lots and yards should be strewn thickly with leaves and other decaying vegetable matter from the woods. A

few days devoted to this work will produce a heap of manure by spring which will materially reduce the size of your orders for "commercial fertilizers."

This is a good time too to haul up and put under shelter a sufficient supply of fuel for winter.

For the Southern Farm and Home.

Cultivation of Crops.

REPLY TO MR. SAMUEL I. GUSTIN.

Editor Southern Farm and Home :—As Mr. Gustin seems to have concluded his labored argument in behalf of *subsoil culture*, I beg to say a few words in reply.

I hold that new theories in agriculture, as in every other science, should be based upon facts, and those facts should accompany the promulgation of the theory. Mr. Gustin has recently announced one of these new theories, but contrary to the rule stated, and unlike Mr. David Dickson, he does not base it upon facts or upon his own experience. He proposes that *extreme deep subsoil culture* is the proper method of cultivating crops, and that *surface culture* is "totally" wrong. The first announcement of this principle and practice in agriculture was the notice of a cotton patch that he was cultivating with a "subsoil lifter" the depth of twenty inches every plowing. This cotton patch was first heralded by the Editor of the *Macon Telegraph*, telling his readers how wonderfully fine the crop looked—how green and fresh, and what he thought it would make. Mr. Gustin next publishes in the *Telegraph* a description of the patch, and presents it as an illustration of a new theory in the cultivation of crops, and particularly of the cotton plant. He prepared a plat of land which he estimated one acre, but which others estimated at one half or five eighths of an acre. He applied one thousand pounds Guano to the patch—broke and subsoiled it the depth of twenty inches. He cultivated with the "subsoil lifter," running about the same depth—his stand, five by three feet distance. This cotton patch was heralded far and wide as a wonderful specimen of cotton culture. The account of this patch reaches the month of August or September, when, amid the vigorous growth of the plant and the profusion of blooms, the report ceases and nothing more is heard from it.

Now, Mr. Editor, as "you wish some of your subscribers to test Mr. Gustin's system of culture by experiment, and report," why not step

over to Vineville and get Mr. Gustin's report? He has tried it on cotton as well as cabbage, and I would like to hear from his cotton patch. As it has been blowed so extensively, and so many invited to see it, I think we are entitled to know what it made, and what it cost to make it. The stalks that I saw on exhibition at the Macon Fair were certainly not a fair sample of the patch. They had too many green bolls on them for the middle of last November. I am afraid that most of these bolls never opened at all, as had been predicted, and possibly this is the reason that Mr. Gustin has never reported the number of bales the patch made. This green crop, the middle of November contrasted very strikingly with Mr. Dickson's cotton fields, as seen on the first of November, in which *every* boll displayed the fleecy locks, ready for the picker—even to a field that was planted in June.

It thus appears that subsoil culture is productive of a different kind of cotton from that produced by surface culture. The one is *green* and the other *white*; the one food for the frost, the other material for the cotton mill.

But jesting aside, where are the facts to sustain this new theory of subsoil culture? If Mr. Gustin has not succeeded with it, who has? Then, what claim has it upon our confidence for adoption—under the proposition that every system of agriculture should be demonstrated by actual results on the field? Mr. Dickson, the representative and *author* of surface culture, gives us an account, and the results of *all* his experiments. We thus have the facts as a basis of his entire system of farming; and I refer Mr. Gustin to his book, recently published, and for sale by J. W. Burke & Co., Macon, Ga., for an account of his "success as a planter." What planter in all the South has produced finer crops, or realized larger dividends from his farming operations? Who has even approached him in results except those who have adopted his plan? I challenge competition! Not till Mr. Gustin has exceeded, or even equalled Mr. Dickson's results on the farm can he claim advantage, or even *par value*, for his deep-culture plan. When Mr. Gustin shall have succeeded in growing four bales of cotton per acre, or fourteen bales per hand on a large scale, with an abundance of forage and provisions, then, and not till then, may he presume to compare his root-cutting culture to Mr. Dickson's farming! (See Dickson's Book, page 235.)

But what principle has Mr. Gustin established

in his studied argumentation of two long articles on the subject of subsoil culture? What has he proven? He makes a number of propositions that no man of intelligence will question. For instance: That water standing in puddles about swamps and lowlands will become stagnant and not benefit crops; that fish will thrive better in fresh, than in stagnant water; that the hole in the bottom of the flower pot must not be stopped up; that plants may perish from drowning as well as from drought, etc., etc.

Now, Sir, I ask you, what have any of these things to do with our subject? The question is: which is the more rational, and the more in accordance with the laws of nature? Subsoil, or surface culture? and which has reported the best results? I contend for surface culture, of course premising deep breaking and subsoiling before planting. I claim that the soil should be given to the planted crop, and not again be disturbed by the ruthless invasion of the subsoiler. That the roots of the plants should have unmolested access to the soil, to grow and ramify and permeate in every direction in search of moisture and nutriment, in accordance with the promptings of vegetable instinct. The roots are the main feeder, the mouths of the plants, which imbibe the nutriment of the soil and convey it to the stem and fruit. True, the leaves execute a function promotive of the growth of the plant, in absorbing ammonia and other gases from the atmosphere; but if the roots were not the *vital* supporters of the plant, why select rich land for a good crop? and why do plants droop and die in poor land? The atmosphere is chemically the same over rich and poor land. Yet the plant or tree, rooted in a rich soil, grows and flourishes, while the one allotted to a sterile soil is droopy and unfruitful. Mr. Gustin thinks that the leaves play the most important part in feeding the plant! How can this be so? Is not the plant absolutely dependent upon its roots for existence? Is it not a law of nature that the roots *first* form and strike out into the soil, and then appear the stem and leaves? So, the function performed by the leaves cannot be vital, but is merely subsidiary. Cut off the roots of a plant, and the plant dies; but you may cut off every leaf and the plant will still live, and will soon be clothed with new foliage, if the roots be healthy and the soil nutritious.

What then, Mr. Editor, do these teach us when we come to cultivate our crops? Do they not show the necessity of husbanding these vital

feeders, and allowing them to grow and lengthen to the very extent of vegetable instinct? As nature has, in wisdom, put them forth, how can we, consistently with the good of the plant we cultivate, tear them up with the subsoiler? We are violating the laws of nature, and disturbing the quiet, instinctive processes of vegetable life. It is not possible to run a plow 20 inches deep between rows of corn or cotton without tearing up every root to that depth. Every plowman knows the fact, for the accumulation of rootlets on his plow shows the work of destruction. That beautiful net work of roots must necessarily be destroyed every time the crop is plowed. The growth of the plant is suspended while nature repairs the damage by putting forth other roots. Mr. Gustin says that it promotes the growth of a plant to cut off its roots, for nature puts forth three roots in place of the one destroyed. But he must recollect that this process requires time, and that the crop must suffer from each delay. That was the very reason that Mr. Gustin's crop was so late. It was full of green bolls, when it ought to have been white with open cotton. Not many of these bolls made till after he had ceased ploughing and cutting the roots. Then the crop was too late to mature in season and the frost caught the bolls.

But Mr. Gustin contends that "the ground between the rows of corn or cotton may be worked several times after planting without disturbing the roots at all." That I deny. Before a stalk of cotton has been up ten days lateral roots may be traced running across the middles, the length of 20 inches or more. How, then, can these roots escape the root cutter that gouges along 20 inches deep? Mr. Gustin must recollect that the roots are the first part of a plant formed, and always *much* longer than the stalk above ground. They are generally five or six times as long. So, the root-cutting process begins with the first plowing of crops.

The deep mellow soil so indispensable in the spring for getting the crops up, and enabling the tender fibrils and rootlets to permeate the soil, is not only unnecessary, but hurtful to crops when the summer's sun comes with his accustomed radiance. Now, we want the soil to become a little compact, and set to the roots of our plants, to shield them and cause them to fruit well. It is not best to maintain such thorough pulverization of the soil during the entire cultivating season. Neither cotton nor corn will bear as well in such loose, mellow soil,

as they would in a soil gradually compacted by the rains of spring and early summer.

Mr. Gustin ridicules me much on the subject of "stagnant water." Not content with making the puddles of water about the swamps "stagnant," he actually asserts that the moisture of the soil from showers of rain will become "stagnated." Who ever heard of such a thing? The moisture of the soil become "stagnant?" A spring shower of rain become stagnant in a soil deeply broken and underdrained by the subsoiler! Why, sir, it is simply preposterous! Prof. Jones of the *Cultivator* refused to say that the moisture of the soil would become "stagnant." Yet, Mr. Gustin will have it so any how! I did not speak of "embedding" water, but "moisture," by which I simply meant, to husband this moisture for the benefit of the crops. Mr. Gustin has contorted this remark of mine into ridicule. It was made in connexion with the popular practice of cultivating with the shovel and the straight plows—turning up the soil to the sun and wind; and I still contend that such deep plowing does unnecessarily dry out and waste the moisture of the soil which would be preserved by shallow culture. I will do Mr. Gustin the justice, however, to say that his subsoil culture is more conservative in this respect than many of the straight plows used in popular agriculture.

But Mr. Gustin, so afraid of getting right on this question, actually leans dangerously far on the opposite side, in denying the benefit of showers of rain upon crops! He says: "moisture to be useful to plants is obtained in an entirely different way. Ammonia, carbonic acid gas, and watery vapor, are extensively diffused through the atmosphere, and the hotter it is, the greater is its capacity for holding water"—consequently, during the hottest, driest weather in the summer, plants ought to grow the best, because, forsooth, they have the benefit of the most moisture! Now, Mr. Editor, I incline to close this discussion just here, for I dislike to discuss an agricultural question with any gentleman who denies that showers of rain are either essential or good for growing crops. because the moisture may become "stagnant." But I wish to make one other proposition.

If subsoil culture were really the best for cultivating crops, there is one insuperable objection that must ever prevent it becoming the popular practice. We cannot cultivate enough land to make dividends on the capital employed. To break and subsoil land in the spring, and

then subsoil it every two weeks during the entire cultivating season, requires an enormous amount of labor and horse power. Put Mr. Gustin in a hundred acre field, and he would find a very different job from that of cultivating an acre patch. He would have to employ a large labor force and plow team; and the crop would have to be very abundant to pay expenses on such land as we cultivate in Georgia. Mr. Dickson, in slavery times, cultivated and gathered fifty acres to the hand—including seventeen acres in small grain. Perhaps Mr. Gustin could tell us how many hands and mules would be required to cultivate that fifty acres with his subsoiler? The great advantage of the surface culture system is, the large area that can be cultivated to the hand and to the horse. It behooves us, now, to economise labor and other expenses, and even if Mr. Gustin's plan were correct in principle, it cannot be adopted, because *impracticable and inexpedient*. Such a system cannot be adapted to farming on a large scale, but must ever be confined to gardens and small patches; and I think it a fallacious substitute for a more rational system of culture—even on that small scale. If Mr. Gustin could see my collard and cabbage and corn patches, I think he would suspect that his "subsoil lifter" had been there. But it has taken no part in the culture of these crops. As Mr. Gustin is a professed horticulturist, I invite him down and will lay him a wager of a fine cabbage head against a bunch of his "toothsome" asparagus, that I will show him vegetables that would do credit to his "subsoil lifter."

By the bye, Mr. Editor, I am afraid we are to have a bad crop year. The rains are very fine, but if, according to Mr. Gustin's theory, all these showers should become "stagnated" in the soil, what a disastrous effect it may have upon the crops? Respectfully,

J. DICKSON SMITH.

Magnolia, Houston co., June 17, 1870.

WHAT BECOMES OF OLD SHOES.—They are cut up in small pieces, and these are put for a couple of days in chloride of sulphur, the effect of which is to make the leather very hard and brittle. When this is found to have been effected, the material is withdrawn from the action of the chloride of sulphur, washed with water, dried, ground to powder, and mixed with some substance which causes it to adhere together, for instance shellac or any other resinous material, or also good glue or thick solution of gum; it is then pressed into moulds and shaped into combs, buttons, knife-hafts, etc.—*Cosmos*.

For the Southern Farm and Home.

Letter from John Plowhandles.

Mr. Editor:—In my last letter which you so kindly presented to your readers, I attempted to assert the dignity of the profession of agriculture, and to claim for myself and my large family connection the consideration and respect which are due to us as the main pillars of our country's industry. I think I have succeeded. When I went to town last week to sell a fine load of wheat and buy a few little things for the old woman and the young folks, I found the clerks in the dry goods stores much more polite than they used to be, and when I went to the hotel to get my dinner, nobody laughed at my homespun clothes, or refused to sit near me because I did not wear a *bleed* shirt. Several professional gentlemen showed me polite attentions, inquired kindly after my crop, and assured me that the success of me and my family alone could save the country from ruin.

While in town I called to see my old friend and kinsman, Dave Lewis, the Secretary of the State Agricultural Society, whom I have known for many years, and whom I respect most highly for his truth, honesty and kindness of heart. I found him as busy as a bee, writing letters and getting ready for the Fair, which he told me was going to be the biggest Fair that was ever held in the South.

Talking of one thing and another I asked him how much the Legislature had appropriated for the State Agricultural Society. I knew that they had voted millions and millions of our money as "State aid" to all sorts of railroads and other enterprises of doubtful utility, and I was curious to know whether any of the "State aid" had been given to agriculture, without which the railroads and other enterprises would be utterly worthless. I was astonished to find that not one dime had been appropriated for any agricultural purpose, and that the State Agricultural Society had no income whatever, but the few dollars which are paid as admission fees of members.

Now, Mr. Editor, although I am an old democrat, dead against internal improvements at the expense of the State, and opposed to the whole system of State aid which has been recently established among us, I am decidedly in favor of the State making liberal endowments for educational purposes, and for the promotion of the agricultural interests. I should be glad to see the legislature appropriate \$100,000 annually for the use of the State Agricultural Society,

so that it might have the means to do real good and become one of the most important institutions in the State. I believe that the money would be well expended, and that in a very few years it would add incalculably to the wealth and prosperity of Georgia.

The individual farmer, however anxious he may be to avail himself of every means of improvement, and acquire the best and most reliable information on every subject connected with his calling, cannot do so in a majority of cases, unless he is assisted by some associated effort like that of a State Agricultural Society, which by legislative aid in money, by wide correspondence, by the introduction of foreign seeds, stock, grasses, fruits and other produce, by the collection and communication of valuable information as to the results of chemical experiments, of experiments in the cultivation of crops, and in the relative value of various articles of farm machinery, and in the careful collection and dissemination of reliable crop statistics to guide the farmer in the planting and sale of his produce—has the time, the means, the ability and the skill to make the necessary experiments and investigations, and bring them within the easy reach of every tiller of the soil. Farmers, however ambitious and enterprising, cannot by their unaided efforts, because they have not the time or the ability, make the experiments which have already done so much to develop the resources of the country. They cannot individually gather and make practically available the rich stores of agricultural information which can be collected by the combined efforts of a capable State Agricultural Society; nor can they obtain access to the statistical information which exhibits the great vital question of supply and demand, thus showing the farmer how he ought to plant and what his produce is worth.

If our farmers had a Society which could give them accurate information as to the best and most approved means of preserving the fertility of the soil, as to the best and least expensive mode of drainage, as to the best way of cultivation, as to the best means of gathering and applying manure, as to the best implements of husbandry, as to the best stock and how to feed them—in short, as to the performance of all the operations of agriculture in the best and most economical mode, it is easy to see what immense benefit would accrue to the agricultural interests, and thence as a natural result to the welfare of the entire community. In every country

where agricultural prosperity has reached a high point, it will be found that the government has given efficient, generous and continual assistance, and in every country where the ruler has neglected or refused to perform this duty it will be found that the people are poor, lacking in intelligence, and unprosperous.

To obtain a liberal legislative grant for the State Agricultural Society shall be the object of my exertions, and I pledge myself now to you, Mr. Editor, to do everything I can by my own vote, and by my influence, to secure the performance of this act of justice. Agriculture is immeasurably the most extensive and most important interest in the State. It feeds and clothes our people and helps to feed and clothe the people of other countries. It furnishes directly or indirectly, all the money to defray the expenses of government. It is represented by far the largest number of citizens, and upon it depends the physical and moral prosperity of the people. To neglect its interests and promote those which are inferior in value and weight of claim, is an injustice which we ought not to suffer, because we have in our hands the means to redress the wrong.

The members of the legislature are elected by us agriculturists. No candidate can succeed in opposition to the declared will of the Plowhandles family. It is time that we should use our power for our protection. Whoever presents himself for election to either branch of the Georgia Legislature this fall let him be compelled to pledge himself to support a liberal grant of money to the State Agricultural Society. Should he refuse to give the pledge every member of the Plowhandles family votes against him, and in favor of the man who will stand by us. Let aid to agriculture be the great issue in the canvass. We have no other political issue. Let us be firm and united and we cannot fail. We can control the election in every county in the State. Let us do so for the noblest and most beneficent purpose which could engage our attention. Railroads and speculative enterprises have had enough for the present. Let us now try to raise the money to pay the debt which "State aid" has created. Foster agricultural progress, increase the production and the value of our land, and the more easily and promptly will that debt be paid. Let no member of the Plowhandles family vote for any man who does not solemnly pledge himself to support heartily a munificent annual grant to the Agricultural Society. We want \$100,000, but

if we cannot get that we will accept \$50,000, and if that be more than we can afford, we might get along with \$25,000.

Yours very respectfully,

JOHN PLOWHANDLES.

For the Southern Farm and Home.

The Value of County Agricultural Societies.

THE impetus which has been given to agricultural improvement by the State Society, the Cotton States Association of Augusta, and the other societies of similar character which have been formed in different parts of the State, is undoubtedly very great. They have set a good example. They have induced our people to think of something else than the ruinous results of the war, the loss of their negroes, and the "fantastic tricks" of the Radicals. They have shown them if they will only go to work, put their shoulders to the wheel and push with a will, they can get out of the slough of despond into which they had fallen; that there is life in the old land yet; and that we can be as rich and prosperous as we ever were if we only help ourselves.

We wish that every county in the State had an active, energetic Agricultural Society, under the regulation and government of a plain practical constitution and capable executive officers, where the farmers could meet regularly at stated intervals, and discuss all matters relating to their calling, giving and receiving valuable information, interchanging their experience, communicating their failures and successes, pointing out the causes of both—talking of everything that relates to the farm, the garden, and the fireside, and at the same time cultivating closer and more intimate relations with their neighbors and friends, combining pleasure and profit, and acquiring a strength in union which as individuals they cannot possess.

Take up any copy of the *Weekly Tribune*, of New York, look at its agricultural pages, and you will see there a regular report of the proceedings of the weekly meetings of the American Institute Farmers' Club. Examine these reports for any one month and see what a vast number of subjects have been discussed, what a mass of reliable and important information has been imparted, how thoroughly the members of this club are posted in all that relates to their business, and with what ease and plain practical sense they tell what they know. One man wants information on Turnip culture, and asks some question on the subject. One, two, three,

and perhaps half a dozen, members who know all about turnips from practical experience, answer the question. In the course of the discussion, a new implement of husbandry is mentioned, and its merits or demerits are immediately pointed out by men who have used it themselves, or have learned all about it from neighbors who have tested it. And so one subject leads to another throughout an almost endless range of subjects, all interesting and instructive, discussed in simple language, not in set speeches, so that the record of the proceedings of this club during a year contains mention of almost everything upon which the members can desire information, from the most important to the most trivial.

This is the model we would take for our County Agricultural Societies. Of course we could not establish them on as large a scale, nor could they meet as often as that in New York; but with very little expense of money or time they could meet in the evening every fortnight or every month, discuss freely among themselves the matters upon which they severally feel an interest in relation to Southern Agriculture, have their proceedings recorded by some member who has the pen of a ready writer, and thus collect a mass of valuable information, from which they could from time to time furnish interesting extracts to the agricultural press, which would be very glad to publish them.

Now the isolated farmer is liable to be duped by all the humbugs which are daily presented to defraud him. He has no access to statistical information of crops, produce markets, etc., except that furnished by those whose direct interest it is to deceive him. Let an agricultural society be established in his county, and the peddler of patent implements, double-detonating self-acting fertilizers, six-horse powers that can be run with one mule, corn that matures in a month, and cotton seed that produces several bales to the acre and a staple six inches long—will find that his occupation is gone, and that the farmers are not such fools as they look. There is no more potent agency to explode humbugs than such a club. Then, being in the receipt of authentic statistical information as to the condition of the crops and the state of the markets, they can regulate their planting operations and the sales of their produce with a knowledge of what they are doing, and not drive along blindly as now, depending solely on information furnished by speculators in and

manufacturers of the very articles which planters produce.

It is not the annual show, the great crowd, the fast horses, the number and variety of the articles exhibited, or the premiums—although they all have their advantages and do vast good—which constitute the value of agricultural societies, but it is the spirit of emulation, of improvement, of enterprise and inquiry which they generate; it is the combination and attrition of intellects directed to a common object; it is the combination of interests, which make them so beneficial, so essential we would say, to the enlightened success and real prosperity of an agricultural community. Doctors and lawyers have their conventions, merchants and manufacturers have their unions, operatives have their leagues, every other class has its machinery for combination of interest for its protection and advancement. Agriculturists alone—the largest, most important, and most productive of all classes—are segregated and divided—going it alone, and being duped on all hands, taxed to death, swindled systematically, and bamboozled generally by all other classes.

If every county has a live Agricultural Society, in which the farmers take an active interest, and if these county societies put themselves in close relations with the State Society, and with the Agricultural Societies of other States, the farmers will soon get to be as smart and as well informed as any other class of the community, and they will soon cease to be overseers for foreign employers at shifting wages.

Let our farmers, then, make a beginning, set the ball in motion. You may commence with a few members, but you will soon find that you will grow morally and numerically. Let these County Societies join the State Society, send delegations to its meetings, and participate in its proceedings, and the agricultural interest will soon become *the* power in the land to the advancement not only of the agricultural community, but of all other classes who desire an honest government, good laws, economical expenditure of the public money, and the prosperity of the whole people.

CINCINNATUS.

WHY should we fetter commerce? If a man is in chains his spirits are broken; but let him twist the fetters from his legs, and he will stand erect. Fetter not commerce, sir—let her be as free as air; she will range the whole creation, and return on the wings of the four winds of heaven to bless the land with plenty.—*Patrick Henry.*

From the South Carolina Agriculturist.

Turnip Culture.

It is not our province to-day to impress upon the planters of the South the necessity of providing large quantities of this valuable root crop for plantation use and domestic animals, preferring as we do to give details of our system of preparation and culture. We have most successfully cultivated the Ruta Baga, and since our experience of planting commenced, have not failed to raise a most respectable crop. With field turnips we have never succeeded so well. We have planted all varieties of land, in all sorts of condition, and our perseverance in this culture has been rewarded by encomiums from our neighbors, attributing our success to luck. We do not believe in luck. It is arduous, laborious perseverance in anything, which secures success. We commence by breaking our land well with a two-horse turning plow, and, as soon as we can do so, we turn round and break it better. We then plow it a third time and subsoil it to a depth of fifteen inches. If it is rough and cloddy, we harrow at each plowing, so as to thoroughly pulverize every particle of the soil. To prepare clay soils for the turnip crop requires a great amount of labor. Nine hundred and ninety-nine turnip fields out of each thousand on the clay lands of our State do not receive the proper preparation, whilst good, honest plowing on sandy and loamy alluvial soils, usually effect this thorough preparation with but little labor. When the soil is thoroughly and deeply plowed it is best to incorporate rough manure by again turning over the soil. The turnip is a gross feeder, and if the soil is deeply plowed the coarsest and roughest manure is as good as that in more minute division. By all means furnish a large and ample amount of the producing elements. The decomposition of the manure when buried has a most favorable effect on turnip soil, and gives it a peculiar greasy look, which always indicates high productive qualities. The sooner then in spring that the turnip land is broken up and made ready to receive the rough manure the better.

It is bad policy to leave off preparing the land until it is dried up by the summer's heat, for then it is next to an impossibility to make the proper preparation without favorable rains. We do not admire the practice of cow-penning clay soils, which become impacted by the treading of the hoofs of animals, because it renders the preparation, in the most favorable seasons, exceedingly difficult. On light, sandy lands, readily absorbing the ammonia from the urine of animals, this treading is highly beneficial, and it gives consistence and a retentive quality to soils otherwise too porous. We have found vegetable matter incorporated in large quantities early in the season the most beneficial in its effects, especially when we applied a dressing of ashes, guano and gypsum, which we invariably do immediately before planting by scattering broad-cast, and plowing under with short narrow plows, or repeated applications of the cultivator. The cultivator leaves the soil in the best condition for the reception of the

seed, as it is in a smooth, level state. If the land is ridgy, much of the seed will be wasted by being put too deep to allow them to germinate. We have practised drill culture altogether on ridges, formed similar to cotton beds, eighteen inches apart, which were formed on a furrow filled with specific fertilizers. If these are not elevated too much, it is more convenient than to plant on an entirely flat surface, as it enables the cultivation to be more thoroughly performed in the young stage of the plant. Should a wet spell set in before the plants are perfectly established it enables them to withstand its bad effects; for although the turnip consists of a large proportion of water, it is most chary of too much moisture.

Here let us remark that turnip lands should be most thoroughly drained, for underlying moisture affecting the top roots causes the plants to scald and die out. We use a seed drill and about two pounds of seed to the acre. Having our land prepared, ready to put in the seed, we select a season to plant them when the earth is thoroughly damp, and if the weather is showery so much the better. In such weather we invariably secure a good stand of healthy vigorous plants, which grow out of the way of insects in ten days.

If the insects or turnip fleas should destroy first sowing, harrow over the beds with a light single horse harrow, and immediately sow over the crop, and persevere in this practice until you do secure a stand, which you will have as soon as the nights become cool and precipitate heavy dews. We have made fair turnips sowed in the first week of September. As soon as the plants have four or five leaves, the beds should be pared down with the cotton-scraper and thinned out to six inches in the drill. A keen hoe of that width should be used, and all the grass and weeds should be finger-picked carefully from the plants. Do not apply earth to them, but allow them to hang by the tap root and be awayed about by the wind, as it is the opinion of English turnip-growers that this develops the bulbs at an earlier period. When turnips are ten or twelve inches high they should be thinned to a final stand of twelve inches in the drill. Those that are pulled up at this stage of their growth, come in well for culinary purposes or stock feed. Frequent cultivation with narrow plows or a small cultivator, with regular weedings, will secure with fair seasons a good crop on all thoroughly manured soils. The soil should never be allowed to become encrusted, but should be stirred with proper implements immediately after each rain, as soon as it is in a condition to be left in thoroughly loose state.

We have spoken thus far only of the preparation of the soil, culture, and the application of rough compost manures. Cow-penning on sandy soils is an admirable preparative. We have penned goats and sheep on clay soils with good effect. They soon reduce the most rough, cloddy soils by cutting it up with their feet, and their manure is in a state of division, which allows its even disposition over the field. They are too apt to sleep immediately against the

fences; and when this is the case, the manure being easily gathered, should be spread over other portions of the field. We have applied guano at the rate of three hundred pounds to the acre, broad-cast, and in lesser quantities in the drill, with great effect on the turnip crop. We think this fertilizer indispensable to the production of fine turnips.

Bone dust, gypsum, and ashes are also valuable fertilizers. If we were to make a compound to act most beneficially we would apply two parts of Peruvian Guano, four parts of bone dust and four parts of salt broad-cast at the rate of four hundred pounds to the acre, with the least preparatory plowing. This should be incorporated with a sufficiency of gypsum or pulverized charcoal to check the too hasty evaporation of the ammonia, and should not be plowed in deeper than three inches. As we have already intimated, no planter need despair of raising good turnips. Deep and thorough tillage will tell. A great portion of the cultivation should be done before the seed is planted. Old Holland, in his *Plinie*, says: "The best husbandmen, and such as are more exquisite in their practice of agriculture, give order that the ground for turnips should have five tilths." If the old English farmers, in the days "when the earth was young" and the land fertile, required five plowings, a like number is now equally indispensable. We have spoken of the culture of the *Ruta Bagas* in this article, because they are easier raised, a more valuable crop, and can be preserved better than the white turnips. The flea, so destructive to rough-leaved turnips, seldom attacks the *Ruta Bagas*. They can be planted earlier, and, having no habit of growing pithy, have a greater length of season to grow, and thus have a great advantage in producing a heavy crop.

Our suggestions as to the preparation and cultivation of *Ruta Bagas*, are equally applicable to all other varieties of turnips.

AUTHORITIES ON ADVERTISING.—"Without advertising I should be a poor man to-day."—*H. T. Helmbold*.

"My success is owing to my liberality in advertising."—*Bonner*.

"Advertising has furnished me with competence."—*Amos Lawrence*.

"I advertised my productions and made money."—*Nicholas Longworth*.

"Constant and persistent advertising is a sure prelude to wealth."—*Stephen Girard*.

"He who invests one dollar in business should invest one dollar in advertising."—*A. T. Stewart*.

"P. T. Barnum, the noted exhibitor, ascribes his success in accumulating a million of dollars in ten years to the unlimited use of printer's ink."

"A man who is liberal in advertising is liberal in trade, and such a man succeeds, while his neighbor, with just as good goods, fails and drops out of the market."—*Horace Greeley*.

The Cotton Manufactures of India.

One of the most singular social phenomena of our time is the fact that in the chief producing countries of great staples, although they may contain a skillful population, the branches of industry which depend upon those very staples either do not lift their heads at all, or have to be sustained by all kinds of coaxing and pecuniary subsidy. Perhaps the most remarkable illustration of this fact is seen in the case of the cotton manufactures in British India. While the cultivation of the raw material, and the exportation of the same, thereon dependent, increased, in the five years elapsing between 1861 and 1867 to more than double, and, in the last named year, the quantity produced approached the highest estimate attained by the grand production of America just before the opening of our civil war, the manufacture of cotton there cannot be kept up without special aid from the mother country, notwithstanding the favorable circumstances that surround it, and the enormous home consumption of cotton yarn and fabrics.

Of the whole product of British India, amounting to about 2,300,000 bales of 400 lbs. weight, the 25 factories of the country, comprising 392,000 spindles and 4540 shuttles, consume only 77,400 bales, while, on the other hand, the importation of manufactured cottons amounts to 213,000,000 lbs. annually. The total cotton consumption of India is 620,000 bales per annum—an amount which when compared with the total of manufacture above given, clearly shows what a heavy share of work must be performed by the native hand weavers. Of the whole number of spindles, the Western provinces alone get 319,394, and 4,199 shuttles, employing 8,170 workmen, and consuming 62,000 bales of cotton. Bombay and its neighborhood have 9 factories and 279,000 spindles, with 4,059 shuttles. In the Eastern country, at Calcutta, there are only 2 factories, which, with 42,500 spindles and 70 shuttles, consume a yearly supply of 6,850 bales, while all the rest of India has but five factories, employing 30,000 spindles and 800 shuttles. Their consumption is only 5,000 bales per annum.

All the East Indian factories are owned by joint stock companies, and only seven of them have, thus far, yielded their stockholders a 5 per cent dividend. The rest, after several years of existence, have declared none.

Although strikes frequently occur in India, and, along with the fact that most of the workmen return to their homes, for at least 4 to 6 weeks of each year, rendering it difficult to build up a good class of reliable workmen, the condition of the latter in India, as a class, may, upon the whole, be considered favorable. The natives, who attain great skill in the management of English machinery, are generally directed by European managers and overseers. There are 16 men, usually, to every 1,000 spindles, and 86 men to every 100 shuttles. The yarn produced is chiefly from No. 10 to No. 80, and the fabrics are the different kinds of the so-called T-cloth and canvass.

The rate of wages by the day and by the job are about 50 per cent. less than in Europe. Thus workmen get per month:

On the cleaning machines.	*10 rupees
Girls on combing and carding.....	6 do
Girls on the forespinners....	8 to 11 do
Overseers for every four	
Self-actors.....	15 to 18 do
Spinners and Self-actors.....	10 to 12 do

The production somewhat resembles the English, so that about $3\frac{1}{2}$ ounces of No. 20 thread are produced per spindle each day, and the rapidity of the shuttles is about equal to that of the German weavers.

The circumstances that militate against the favorable state of the case are:—1st, The high rate of the capital invested, viz: about 40 rupees per spindle; 2d, The high price of motive power. All the factories of India are worked by steam, and not merely the coal, but the very water is costly; 3d, The great expense of employing European overseers.

Yet, even from the very closest consideration of all these circumstances, it cannot be discovered that the Indian cotton spinner is more costly than the English. When, in addition to all these facts, we remember that more than half the English cotton thread and manufactured goods now imported are made from the East Indian staple, and that the raw material used has to traverse a distance of 5,000 miles to the place of manufacture, and, then, to the point of production burthened with another duty, we arrive at the only rational explanation that can be given of the contrast between the Liverpool cotton quotations and the rates of the raw material, along with the cost of the manufactured goods in India. This *status* of the case is evidently unnatural, and forces upon us the fact that the chief condition for success in the cotton manufacture lies not so much in the capacity of the workman, as in the cost of the capital.

Many points of the above review apply to our own Southern States, and the remedy must be found in wiser legislation with regard to the tax imposed upon industry, the rapidity and safety of transportation, and the alleviations of all the burthens that retard labor.—*New York Mercantile Journal*.

*A rupee is equivalent to about fifty cents.

RISE OF SAP IN TREES AND PLANTS.—The nature of capillary or hair-like attraction, has long been known and satisfactorily studied. It is easily illustrated by placing a lump of loaf sugar in a plate containing a little water, when the liquid will almost instantaneously rise to the sugar, even two or three inches beyond its level. On this principle the rise of sap in plants and trees has been explained. The celebrated philosopher, M. Berquerel, considers that electricity is an acting cause. A capillary tube that will not allow water to pass through it, does so at once on being electrified, and he conceives that electro-capillarity is the efficient cause of sap traveling in vegetable life.

The Cultivation of Mushrooms.

Mushrooms are grown artificially in hotbeds in different ways, and we proceed to indicate the means generally adopted, and the precautions necessary to be observed :

1st. The preparation of the manure destined to form the hotbed.

2d. The formation and management of the bed.

PREPARATION OF THE MANURE.

A very important matter is this, and on its judicious management success entirely depends. Nearly all the failures to procure mushrooms arise from ignorance on this point. It may be performed in all seasons, but success is more certain in spring and autumn than at other times.

Take good horse manure proportionate to the number of hotbeds required, giving preference to that from draught or working horses. Draw the fork through it to extract the long straw and hay, and take care to remove dirt or any other unsuitable substance.

Let the ground selected for forming the bed be smooth and fresh, and be protected from the incursions of poultry. On it deposit the manure in a heap four feet high. Length and width optional.

After well pressing or stamping, leave it level, but with a surface like the markings on a millstone. If in summer, and the weather be dry and hot, wet the heap abundantly; in the contrary case, do not water at all. The manure should neither be dry nor too moist. At the end of eight or ten days, when it has fermented (which is known by the white color of the interior, and is even noticeable on the surface), the whole heap should be turned and reconstructed on the same spot, taking care to place all the manure that was on the outside in the interior of the heap, together with any portion that may not have undergone equal fermentation. The bed must again remain eight or ten days, at the end of which time it will have gained nearly as much heat as at first. Again it must be turned, as previously, and in about five or six days the manure acquires the degree of mildness requisite.

It is not always easy to judge when the proper condition has been reached, but it is essential; and this it is which makes practice almost indispensable; for on proper discernment at this stage rests the ultimate success of the bed.

When the manure has become odorless, is of a brownish color, binds well, is soft, and on being pressed, does not give out any water, then it may be considered good. If it will not bind, or is plashy and wet, it has not arrived at a suitable state. In the first instance it must be moderately moistened and turned about; but in the second the superabundance of humidity will, in all probability, have spoiled it, and it will be better to recommence.

One frequent cause of failure in the attempt to cultivate mushrooms arises from the very small quantity of manure used for the experiment. It may easily be imagined how much more difficult it is to obtain an equal fermenta-

tion in a very small bed, which is influenced on all sides by the atmosphere, than when a bed of considerable size is formed. It is, therefore, recommended that a larger quantity be prepared than would be required for the formation of the mushroom-bed. The portion not used may be employed for ordinary purposes, without having undergone a perceptible deterioration in its fertilizing quality.

THE FORMATION AND MANAGEMENT OF MUSHROOM-BEDS.

The manure having reached a proper condition, the spawn should be introduced. In spring and summer the bed should be situated in the shade; in autumn and the beginning of winter, a southern aspect; but in all seasons it is best in a cellar or other sheltered place, well closed in and darkened.

The size of the bed should be from 21 inches to 26 inches at the base, and the same measurement in height, finishing off span-shape. The sides must be gently beaten with a spade to make them even and solid; afterward, the bed should be combed with a fork over the surface and on both sides, from top to bottom, so as to draw out any straw which might be too near the surface. Finally, spread over it some litter, which must always be kept dry, and in this condition the bed is left for several days, in summer, watering it from time to time with tepid water.

Littering down is only necessary for beds placed out of doors or in sheltered positions where light penetrates. Those made in perfect shade and darkness do not require it.

After a few days the bed will have reached a moderate degree of heat (70° to 80°), which can be ascertained by the insertion of the probe generally used for hot-beds.

The next process is dibbling or planting the spawn. That manufactured in England is made into the form of oblong square cakes or bricks; but that imported from France is in thin layers. The latter is the variety used by the market gardeners around Paris. Both kinds are impregnated with a whitish filament or felt-like substance, consisting of mushroom-plant, and possessing the property of reviving after having been kept dry in a granary for several years.

The process of dibbling is performed with the hand, by making little oblique openings about 2½ inches in diameter, and of the same depth. Into each opening is introduced a piece of spawn.

If English spawn is used, each piece is about the size of a small hen's egg; but if French, a flake of about the same diameter as the opening into which it is inserted is the proper quantity. The manure removed in making the hole is then restored, and well pressed down. Mushroom spawn should always be in a dry condition for conveyance, to insure its preservation; but so used, it often happens that it takes root too slowly, allowing the bed in the meantime to become cool. To obviate this inconvenience, the spawn should be deposited four or five days before planting in some damp situation (in a cellar, for example) which will make it soft, and facilitate the vegetation; but care must be taken

that it does not become moldy. The openings are made equidistant, nine inches apart, on two lines, the first commencing three inches from the base, and the second five to six inches above the first, the holes on the first line alternating with those on the second in a triangular pattern. This being done, the bed is again littered over, and at the end of a few days it must be examined to ascertain if the spawn has taken root, which will be known by the increase of white filament in the dibbling-hole spreading itself in the bed. If not, the spawn, which has become black, is carefully withdrawn; and, in holes skillfully made by the side of the old ones, a new supply is immediately introduced; unless the bed may have become overheated, in which case it is allowed to repose until it has returned to a suitable temperature, which should not decline below 75°, nor rise above 80°.

If the spawn has taken well, it is allowed to remain six or eight days, to permit of its penetrating to the top of the hot-bed, when the latter is pressed firmly with the hands before earthing it. This operation consists in covering the entire bed with a layer of finely-sifted earth, about one-third of an inch thick, which is properly adjusted by lightly pressing it down with the back of a spade. The litter is then replaced and lightly watered, if the season requires it. The litter should never be taken off in any season, as its presence tends to keep the bed for a longer time in bearing. The most suitable temperature for good beds in bearing is 50° to 55°, and as a high temperature causes the mushrooms to come small, this should be avoided.

In gathering mushrooms, only a small space should be uncovered at a time. The gathering being finished, a little sifted earth must be placed over the spots from whence the mushrooms were removed, and the litter immediately restored. In dry seasons, after gathering, it is often useful to water moderately under the litter; but in wet seasons it is frequently needful to renew the litter, which may have become too much saturated with rain. The produce from one bed usually lasts from two to three months; but if in a cellar, it might last from four to five months.

SOUTHERN AGRICULTURAL MAXIMS.—Cotton is King; the world seeketh for his power; his sway is unlimited, and his locks are fine gold. Plant cotton and buy bread.

Look to the merchant for advances and mortgage independence, but increase cotton. The refuse hay of the Yankee farmer is sweeter to the tooth of the cotton planter's mule than succulent fodder, and Western flint corn containeth more nutriment than Southern gourdseed.

It is better to handle much money than to make sure gains, and a harrowing debt to be preferred to a sure surplus. Look abroad for meat; but at home brave gnawing usury.

Starve the cattle on a thousand hills, but buy guano.

Great is he who buyeth meat and bread and many oxen and asses, but cheapeneth garments for the world; he extendeth his labors; he

sendeth abroad for woodware and utensils and field implements; he handleth much money and giveth the stranger the profit thereof; but he is accounted great, and the trading man maketh obeisance to him; but the contentment of him who oweth no debt bringeth no fame among them that go to and fro over the face of the earth.—*Augusta Chronicle & Sentinel.*

Profits of Steam Ploughing.

The following extract of a letter from E. Lawrence, sugar planter in Plaquemines Parish, Louisiana, presents a very gratifying view of the results of plowing with the Fowler steam plows, of the importation of which an account has heretofore been given.

In the fall of 1867 I imported a complete set of fourteen-horse power double-engine steam-plowing tackle, from Messrs. John Fowler & Co., of Leeds, England. Owing to the very rainy and bad weather in the fall and winter of 1867, our plowing operations were very limited. Our work, however, proved very satisfactory, and the facility and ease with which my laborers were enabled to handle the tackle, and the anxiety to have more powerful engines for our heavy, stiff clay soils, determined me to order from Messrs. Fowler & Co., a set of their twenty-horse power steam-plowing tackle, which I have found to be all that was required for our heaviest work. Since then both sets have been in constant use, plowing the lands. When employed in breaking up, with the mold-board plow, they run to the depth of fifteen to twenty inches; and when cultivating or subsoiling between the planted and ratoon cane rows, to the depth of twenty to twenty-four inches.

The first forty acres of steam-plowed lands, which were broken up in the spring of 1868 and planted in corn and peas, and sugar cane in the fall of the same year, gave a yield of one hundred thousand pounds dry sugar, being over twenty-five hundred pounds, or two and one-half hogsheads, of sugar to the acre. On other steam-plowed lands, planted the following spring in cane, the result has been nearly as satisfactory, and this too during a season more unpropitious for the yield of sugar than any I have known for the last twenty-five years. Many of my fields where the stand of cane was equally as good, but cultivated only with horse or mule power, and receiving much more labor and attention than the steam-plowed lands, did not produce more than fifteen hundred pounds, or one and one-half hogsheads to the acre. Therefore, my experience, as you can readily perceive, fully justifies me in stating that the yield of cane upon the steam-plowed and steam-cultivated lands, and with *less than half the labor*, will be *fifty per cent.* greater than can possibly be obtained by any other system of cultivation. The advantages which will be derived from the application of steam to the cultivation of the soil, in our rich and inexhaustible lands in the valleys of the Mississippi, and the vast prairies of the West, so admirably adapted to steam cultivation, is not now within the reach of the human mind to calculate.

The prejudices against steam-cultivating machinery may yet for a time retard its general use on this continent; but the scarcity of, and rapidly increasing demand for labor, now so sensibly felt in every section of our country, can only be supplied by the introduction into general use of the steamplough, it will supersede the necessity of the introduction of Chinese labor. We will then be able to supply the world with *cotton, bread and meat*. There is no country so admirably adapted to steam cultivation as ours; and I believe the day is not far distant when the smoke of the steam plow will ever be in sight of the millions of freemen who will then cultivate and inhabit our vast agricultural continent.

From the American Agriculturist for June.

Celery Culture.

BY PETER HENDERSON.

* * * * *

Celery should always be planted on the level surface of the ground; never in a trench, which is the European method, and the one which three out of four of our private gardeners yet practice here. The soil best suited, is a deep rich loam; nothing is better than a well drained meadow or bottom land; if black and peaty it will answer quite as well, but it must be free from water. Celery, though it grows in its wild state in wet ditches, is as susceptible to injury from excess of moisture as a cabbage. In new lands broken up from sod, and where the turf is well decomposed, but little manuring is necessary for the first season, as the vegetable fibre remaining in the soil, in most cases, will be sufficient; but on old lands, continued and heavy manuring, not less than fifty (50) tons to the acre, is indispensable. This, however, we put on with our *first crop* of Beets, Onions, Cabbages, Radishes, Potatoes, or Spinach.—These being marketed by the first or middle of July, the ground is at once plowed up and well harrowed down to receive the celery crop. The manure applied in spring being diffused through the soil by plowing and harrowing, answers to carry through this crop also.

The variety of celery that we still like best for this section, is the "Incomparable Dwarf;" this, when grown for market, is planted at from 2½ to 3 feet between the rows, and from 5 to 6 inches between the plants; this distance gives from 30,000 to 35,000 plants per acre. The average price in the markets of New York during the past fall and winter was 8 cents per root at wholesale—or, for the gross receipts, fully a thousand dollars an acre. But the celery crop of 1869 was unusually short, owing to a deficiency of plants at the planting season, which, together with continued unfavorable weather in September, occasioned an unusually short crop; this caused the price to range about one-third above the average.

We now put more labor on this crop than we did a few years ago, and find it more profitable to do so. In former years only that portion required to be blanched for use in fall, was

"banked up" to the top of the plant with the spade, now we find it pays us to "bank up" all, even if it is not wanted for use until March; only taking care that the "earthing," or "banking up" process, for that wanted last, is delayed as long as possible. That required for use in October is earthed up to the top of the leaves in September; that for November in October; but that for winter and spring use is not earthed to the top of the leaves until November. Thus protected by the earth, we can leave it exposed, as it stands with safety in this section, to the end of November; about that time we take it up and pack it away in the trenches.

Georgia State Agricultural Society.

PREMIUMS FOR FIELD CROPS AT THE ATLANTA FAIR,
OCTOBER NEXT.

1. For the best ten acres of Cotton, \$250.
2. For the best ten acres of Corn, \$150.
3. For the best ten acres of Pea-vine Hay, \$100.
4. For the best ten acres of Clover Hay, \$250.
5. Largest crop of Cotton produced upon two acres of upland, with the mode of cultivation, the amount and kind of manure used, the period of planting, the number of times plowed and howed, the kind of Cotton; the land to be measured and the Cotton weighed in the presence of three disinterested and reliable witnesses, with certificate from them; Silver Pitcher worth \$100.
6. Largest crop of Pea-vine Hay raised on one acre, one bale to be sent as a sample, with a certificate of quantity made, not less than two tons, one bale of which must be on the ground; Silver Pitcher worth \$50.
7. Largest crop of native Grass Hay raised on one acre, the same as above, Silver Pitcher worth \$50.
8. Largest crop of cultivated Grass Hay, including or not a mixture of clover, Silver Pitcher worth \$50.
9. Largest crop of Corn grown upon two acres of upland not less than seventy-five bushels per acre, conditions the same as for Cotton, Silver Pitcher worth \$125.
10. Largest crop of Corn grown upon two acres of low-land, not less than one hundred bushels per acre, conditions same as above, Silver Pitcher \$125.
11. Largest crop of Wheat grown upon two acres of land, not less than 20 bushels per acre, nor under sixty pounds per bushel, conditions same as above, Silver Pitcher, \$125.
12. Largest crop of lowland Rice on one acre, not less than one hundred bushels, Silver Pitcher \$125.
13. Largest crop of Oats, kind, etc., raised per acre, Silver Pitcher worth \$25.
14. Largest crop of Rye, kind, etc., raised per acre, Silver Pitcher \$25.
15. Largest crop of Barley, kind, etc., raised per acre, Silver Pitcher \$50.
16. Largest crop of Sweet Potatoes raised per acre, one eighth of an acre to be dug, and

certificates of the yield by disinterested persons furnished, Silver Pitcher \$30.

17. Largest crop of Irish Potatoes raised per acre, Silver Pitcher \$30.

18. Largest crop of Turnips raised per acre, Silver Pitcher \$25.

19. Largest crop of Ground Peas, or Pindars, raised on an acre of ground, Silver Cup, \$25.

20. Largest crop of Field Peas raised per acre, Silver Cup \$25.

21. Best box of Chewing Tobacco, Southern raised, Plate or Pitcher \$50.

22. Best box of Cigars from Southern raised Tobacco, Plate or \$25.

23. Best sample of Southern raised Smoking Tobacco, Plate or \$20.

24. Best sample of Leaf Tobacco, five pounds, Plate or \$5.

25. Best crop of 'Broom Corn on an acre, with sample of one bale \$50.

Exhibitors of all the above crops must state in writing, in full, to the Secretary, all the requisitions as laid down for corn, cotton, etc., as above, when the articles are entered upon his books for exhibition, with the witnesses' certificates for the measurement of lands, and pounds and bushels per acre, without which the Judges will be required to withhold their awards; and exhibitors not complying with these requisitions will not be allowed to compete for the premiums of the Society.

CROPS BY BOYS UNDER SIXTEEN YEARS OF AGE.

(The Rules for Field Crops to be complied with.)

1. Largest quantity of Indian Corn, grown by any boy under sixteen years of age, upon an acre of land, a patent lever silver Watch worth \$50.

2. Largest quantity of Cotton produced by any boy under sixteen years of age, upon an acre of land, a patent lever silver Watch worth \$50.

SAMPLES OF FIELD CROPS.

1. Best variety of Bread Corn, with two bushels as a sample \$5.

2. Best variety of Corn for stock, two bushels as a sample, tested by weight \$5.

3. Best variety of Wheat, with a bushel of the grain as a sample—plate \$25.

4. Best variety of Sweet Potatoes, sample of 2 bushels—plate \$5.

5. Best variety of Field Peas, sample of one bushel—plate \$5.

6. Best Table Pea—plate \$5.

7. Best variety of Sea Island Cotton, with two stalks as a sample—plate \$5.

8. Best bushel of Rice—plate \$10.

9. Best bushel of Oats—plate \$15.

10. Best bushel Rye—plate \$10.

11. Best bushel Barley—plate \$10.

12. Best bushel of Irish Potatoes—plate \$10.

13. Best variety of Grass Seeds adapted to the South for hay or grazing—plate \$10.

Exhibitors of crops must give in writing to the Secretary a full account of each crop offered—its adaptation for profitable cultivation, etc. Exhibitors of hay must give the mode of cultivating, curing, harvesting, etc.

SUGAR AND SYRUP.

1. Best barrel of Sugar of ribbon and green Cane, raised in Georgia \$100.

2. Best barrel of Syrup, same Cane, raised in Georgia \$100.

3. Greatest yield of Syrup per acre, same Cane \$50.

4. Greatest yield of Sugar per acre, same Cane \$50.

5. Best barrel Sugar from Sorgho or Chinese or African Sugar Millet \$150.

6. Best barrel of Syrup from same Cane \$150.

7. Largest yield Sugar from same Cane, per acre \$75.

8. Largest yield of Syrup per acre, from same Cane \$75.

COTTON BALES.

1. Best 20 bales of common Upland Cotton—plate \$200.

2. Best 10 bales of common Upland Cotton—plate \$100.

3. Best 5 bales of common Upland Cotton—plate \$50.

4. Best 1 bale of common Upland Cotton—plate \$10.

5. Best 1 bale of Upland Long Staple Cotton—plate \$25.

6. Best 5 bales Sea Island Cotton—plate \$50.

7. Best bale of Sea Island or Black Seed Cotton (of 400 lbs.), raised on upland—plate \$50.

8. Best two stalks of Cotton \$10.

When the premium is for more than one bale, samples of all the bags but one (which must weigh 450 pounds and be on the ground) must be made by disinterested individuals and produced on the ground with their certificates. Where the premium is for one bag, that must be on the ground.

Laboremus.

A LAY OF ENCOURAGEMENT.

I

"Strike!" said the Anvil to the Hammer, Strike! and never let your iron cool!—Up head, my boy! Speak bravely, do not stammer! Lest all the world should set you down a fool. There is no time allowed for shilly-shally, But seventy years allotted to the best; Down with the rock, tear up the fertile valley. Work out your purpose—leave to God the rest!

II

You have a purpose—should have one—then begin it! An earnest working purpose is power, Which if you straightway seize upon the minute Will make its progress surer every hour! Build up your fortunes by it—lay them deeply—Make your foundations sure!—then, day by day Raise up your walls—a fortress—never cheaply—Good purposes demand a large outlay!

III.

Toil, Faith, Devotion, Courage, Resolution!—These make your capital—these freely spend; Once sure of your design, the execution Needs all that you can give it, to the end! Oh, boy! man! what a world is in the keeping Of him who nobly aims and bravely toils! Speed to the work! We'll all have time for sloth when we have shuffled off these mortal coils.

W. GILMORE SIMMS

Address of the President of the State Agricultural Society,*Calling an Agricultural Convention to be held in the City of Atlanta on August 16th.*

PLANTATION, COOSA RIVER, June 15, 1870.

The Executive Committee of the State Agricultural Society have requested the Hon. David W. Lewis to withdraw his resignation of the office of Secretary of the Society, and that, upon his withdrawal of the same, I should publish an order reinstating him in said office.

His resignation has been withdrawn, and an order declaring him reinstated in office has been duly published, and he is again in the office as fully in the discharge of its duties as if his resignation had never occurred.

Thus, it is hoped, are ended the embarrassments and the unpleasant issues growing out of the measures adopted to fill the vacancy in the office of Secretary. So far as these measures and the questions rising out of them have brought complaint against myself, or induced attacks upon my official conduct, conscious of the rectitude and disinterestedness of my intentions throughout, I can and do disregard them, knowing them to be based upon error and a misapprehension of facts. I have aimed in all my actions at the good of an organization which I feel has, in a great measure, been entrusted to my judgment and management. I claim no exemption from public criticism for any error, but deprecating the continuance of strife and personalities, for one, I cast them aside, and here now invoke the co-operation of all who feel interested in the success of the Society in this important stage in its history.

Looking, then, to the future, with the lights of the situation, what do we see, and then what should we do? After an existence and successful operation of a quarter of a century, the Society, with the aids which it has received from a public-spirited people, has originated and carried forward a spirit of improvement and progress in agriculture and its kindred arts which is everywhere visible. In nothing, perhaps, is this spirit more manifest than in the eagerness and numbers with which the people visit annual Agricultural Fairs. Indeed, such is the desire to render available all the means and sources of improvement which are to be derived from Agricultural Fairs and cattle shows, that there is scarcely an important city in the State, and scarcely a county with its Agricultural Society, that will not have their Fairs during the coming season. In this line of effort, therefore, the example and influence of the State Society has perhaps accomplished its work. It may be to its interest as an organization to continue its Annual Fairs, or at least hold them in connection with some one of the important organizations in different parts of the State upon terms of mutual advantage. Be that as it may; let the future decide. The important question now presents itself, is there not other and greater work for the State Agricultural Society to perform, and which no other organization can so well undertake? Are there not some measures of legislation which a united and intelligent ex-

pression from those men personally devoted to the cultivation of the soil ought to demand, and never cease to demand until granted? Are there not great and incalculable advantages to be derived from a closer and more frequent intercourse between cultivated minds representing the agricultural interests of all sections of the State? Is it not plain to the most ordinary perception—is it not evident to even plodding labor itself, that in its simplest operations it is in daily contact with both the revelations and mysteries of science, and is not, therefore, every mind and heart ready to enthrone Science as the presiding genius of labor, and to establish, by liberal appropriations made by law, intimate relations between them—relations between the laboratory and the farm as close and intimate as indeed are the relations of cause and effect? Is not this the mission of our organization?

Deeply impressed with the conviction that there is something more to be done than to have mere shows and fairs, I recommend, and hereby call a Convention of the Society, to be held in Atlanta on Tuesday, 16th August. The Secretary has, through correspondence and personal application to the Superintendents of Railroads, obtained the *privilege of the passage over the Railroad, both ways, without charge, of three delegates* from each County Agricultural Society to two semi-annual Conventions. This privilege of a pass both ways free is confined to three delegates from each County Society. All other members and all additional delegates will pay one fare. Where there are two or more Societies in a county, they must unite in the election of representatives, as only three can come from a county. The County Societies are therefore requested, at their monthly meeting in July, to elect their delegates and immediately report their names to the Secretary at Atlanta, who will forward to them the Superintendents' free tickets. Counties which have no organized Societies should organize at once.

The following are among the subjects which will be submitted to the consideration of the Convention:

1. A closer connection and mutual dependence between the County Societies and the State Society. A plan will be submitted which it is believed will give greater vitality and usefulness to both.

2. A careful consideration and examination of the influence and bearing of the legislation of the State upon the interests of agriculture.

3. The system of taxation has some unjust discriminations in favor of corporations and capital—none of any kind in favor of agriculture.

4. Application to the Legislature for a liberal appropriation for the establishment of a Bureau of Agricultural Chemistry.

5. A geological and agricultural survey of the State.

6. The reiteration and continual reiteration of our demand for the payment of the annual appropriations by the Legislature of 1860, of twenty-five hundred dollars—ten years' appropriation now due, and not one ever paid.

7. The delegates from the several County Societies are requested to bring up with them full and detailed reports upon the agricultural condition of their respective counties. Let these reports embrace comparative statements of the probable yield of the crop this year and the last; the number of acres in cotton and grain this year and the last; increase or decrease in the grain crop; more or less attention to the production of meats; changes and improvements in agricultural implements; changes and improvements in the modes of preparation and tillage; changes and improvements in contracts with and management of labor.

These and other topics which members doubtless will present to the Convention are well worth the consideration of assembled farmers and planters.

The time and place are favorable for a great step forward in combining the strength of the agricultural interests in favor of important measures—favorable, too, for a convivial reunion of representative men from every locality and interest in the State. The crops will have been laid by, and the time for the meeting one of comparative leisure. The work on the improvements at the Fair Grounds has been most rapid and successful, and promises, by the time of the proposed meeting, to be so near completion as to make an excursion to the grounds gratifying and interesting.

The extraordinary facilities granted by the railroads is itself enough, to say nothing of the advantages to be derived from the deliberations and social influences of such a gathering of practical and progressive men, to induce the counties to organize, and to preserve their organizations.

The Secretaries of County Societies, at the same time they send up the names of their delegates, will also send a revised and perfect list of their members for 1870. In the returns they will please specify the line, or lines, of railroad over which their delegates will travel.

As this is not a usual but an extraordinary meeting of the Society, the expenses of members and of the Convention will not be chargeable to the city under the contract with the city to pay the contingent expenses of the Society for the year 1870.

BEN. C. YANCEY, *President.*

Taking Cold—How to Do It—And How It May be Avoided.

Not by tumbling into the river and straggling home wet as a drowned rat; not by being pitched into the mud or being spilled out into the snow in sleighing time; not by walking for hours over shoe-top in mud; not by soaking in the rain without an umbrella; not by scrubbing the floor until the unmentionables stick to you like a wet rag; not by hoeing potatoes until you are in a lather of sweat; these are not the things which give people colds; and yet they are all the time saying how they "caught cold and exposure."

The time for taking cold is after your exercise; the place is your own house or office, or counting house. It is not the act of exercise

which gives the cold, but the getting cool too quick after exercising.

After any kind of exercise, do not stand a moment at a street corner for anybody or anything; nor at an open door or window. Whenever you have been exercising in any way whatever, winter or summer, go home at once, or to some sheltered place, and, however warm the room may seem to be, do not at once pull off your hat and cloak, but wait awhile—some five minutes or more, and lay aside one thing at a time; thus acting, a cold is impossible. Notice a moment: when you return from a brisk walk, and you enter a warm room, raise your hat and your forehead will be moist, let the hat remain a few moments and then feel the forehead again and it will be dry, showing that the room is actually cooler than your body, and with outdoor clothing on you have really cooled off full soon enough. Many of the severest colds I have ever known men to take were from sitting down to a warm meal in a cool room after a long walk; or being engaged in writing and letting the fire go out, and their first admonition of it was that creeping chilliness which is the ordinary forerunner of a severe cold. Persons have often lost their lives by writing or reading in a room where there was no fire, although the weather outside was rather comfortable. Sleeping in a room long unused has destroyed the life of many a visitor and friend. Out splendid parlors and our nice "spare rooms" help to enrich many a doctor.—*Hall's Journal of Health.*

"That's How."—After a great snow-storm a little fellow began to shovel a path through a large snow-bank before his grandmother's door. He had nothing but a small shovel to work with.

"How do you expect to get through that drift?" asked a man passing along.

"By keeping at it," said the boy cheerfully "that's how."

"Why," said Miss Anna Dickinson, on one occasion, stepping forward to the footlights and commencing a lecture with a lofty flight of eloquence. "Why was I born?" She paused, and a thrill ran through the audience. Again the rich tones of the winsome woman rolled over the expectant people as she repeated the question, "Why was I born?" And again she paused that the due impression might be made upon her hearers, before she answered her own questions. "Why was I born?" she asked once more in touching and most painful accents when a wicked boy in the gallery shouted, "Give it up!"

THE RAMIE IN TEXAS—BEXAR COUNTY.—The Ramie has flourished this season beyond all expectations. We believe the Ramie is indigenous with us; a plant is found growing wild in our river bottoms much like in shape of leaf, root, stalk, and fibre, as two grains of corn or beans are alike. If the two are mixed together no man can distinguish them, not even in preparing the lint.—*Texas paper.*

One hundred and fifty hogs will eat about 60 bushels of potatoes in a day, if properly fed.

Scientific Department.

Principles and Facts in Agricultural Chemistry.

To THE great mass of those engaged in farming, the facts and principles of the chemistry of agriculture are either wholly unknown or very imperfectly understood, because in most of the works which are published relating to the science, those facts and principles are expressed in technical language, the meaning of which is not generally comprehensible by non-scientific readers, and because the generality of farmers who undertake to inform themselves think it necessary to understand the whole book which they attempt to study—words, tables, illustrations, and all—and, failing to do this, give up the task in despair as one which it is entirely hopeless for them to master.

This difficulty has been repeatedly mentioned to us by farmers who were anxious to acquire a knowledge of the fundamental principles of agricultural chemistry, with a view to a more enlightened cultivation of their land, and we have desired to see some work published in which the great practical truths should be explained in language which all could comprehend.

In looking over some old papers, we found the following plain statement of a "few facts and principles in Agricultural Chemistry, without many words about them," by J. S. Houghton, M. D., of Philadelphia, which comes nearer supplying the want and meeting the desired object than anything we have seen. We reproduce it in the belief that it contains the pith of many volumes, and that it will do more practical good and convey some real instruction to a majority of farmers than many of the elaborate scientific works in which the same truths are "elucidated" by being enveloped in technical words covering pages of close type:

Organic Elements of Vegetable Matter.—Oxygen, Hydrogen, Nitrogen and Carbon.

Inorganic Elements consist chiefly of four acids and four alkalies. The four acids are silicic acid, phosphoric acid, sulphuric acid, and mariatic acid. The four alkalies are potash, soda, lime, and magnesia.

It is useless to give a plant abundance of any one of its constituents—lime for instance—unless you are sure at the same time that the other ingredients are present also.

Ammonia is the great stimulant of vegetable growth, without which all other nutriment may remain inert and dead. It is a compound of nitrogen and hydrogen gases.

Nitrogen is the nutritious or flesh-making principle of vegetables. It is found in great abundance in some grains, (as wheat,) and such grains are always exhausting to the soil. Carbon, in the shape of gum, starch, sugar, butter, oil; fat, syrup, etc., never enters into the composition of flesh to any great extent, and is chiefly used to admit breathing, and to sustain the heat of the body by being consumed in the lungs. It is also deposited in the body as fat.

In the germination of seeds a small portion of vinegar, or acetic acid, is found. Alkalies, as potash and soda, combine with and neutralize this acid, and thus assist germination. Hence, one important use of wood ashes, containing potash, in the hill with potatoes.

Organic matter, as muck, leaves, tan, sawdust, etc., can be of little use until it has undergone decomposition, so as to put its salts and gases in a condition to be taken up by plants. Hence the reason why so many persons find so little benefit from the use of raw muck, half-rotted tan, etc.

Peaty soils are always acid. Seeds will not germinate well in such a soil without the aid of potash, soda and lime to neutralize the acid, and perfect the decomposition of the organic matter.

Lime, in a caustic state, possesses the power of setting free, or bringing into action, the potash which a new soil may contain, and hence may serve as good a purpose as lime and ashes.

Anthracite coal ashes are of little value in agriculture except to open a heavy clay soil. The chief ingredients of any value are charcoal and sulphate of lime or gypsum.

Charcoal decays very slowly under ordinary circumstances. It will last fifty or a hundred years in a dry loam, perhaps longer. In a moist soil, rich in muck, it decays more rapidly, and furnishes carbonic acid to plants, or carbon. It is chiefly valuable, however, as an absorbent of ammonia, and for giving a dark color to light sandy soils. It also retains moisture.

Nitrates, as nitrate of potash (saltpetre,) produce straw in grain; sulphates, as sulphate of soda and sulphate of lime, promote the growth of grain, beans, peas, etc.

It is not known how far soda is able to take the place of potash in the soil, or whether it is indifferent which of the two alkalies is supplied to plants. It is better to furnish both soda and potash when absent from the soil.

Phosphate of lime is a combination of lime with phosphoric acid. It is the chief constituent of the earth of bones. It exists in the seed of many plants in all the varieties of grain which are cultivated for food, and in the ashes of most common plants. It exists also largely in milk. It is almost always deficient in the soil.

A sandy soil admits the heat of the sun more rapidly, and retains it longer, than any other soil; but it is not so retentive of moisture. The application of charcoal and salt increases the moisture of sandy soils, and so does deep plowing.

The roots of plants require a supply of oxygen in order that they may be maintained in a healthy condition. The atmosphere and water furnish a supply of oxygen, but such, possibly,

can only be obtained where the soil is sufficiently open to permit the free circulation of air and water among its pores, and to carry off excess of water, or water robbed of its fertilizing properties. Plow deep and drain.

Sulphate of lime (plaster of Paris) requires much heat and moisture to render it useful on land. In dry seasons, sulphate of soda (Glauber's salts) will prove more beneficial. Bones dissolved in sulphuric acid and common lime are generally more valuable than gypsum.

Quick lime expels ammonia from decomposed or fermenting manures. Lime should never be used in the manure heap, unless covered with a large quantity of well pulverized muck.

Lime has little or no effect upon soils in which loam or vegetable matter is deficient. The effect of lime is, in fact, to eat out vegetable matter.

It is important to bear in mind that the application of lime, soda, potash, or bones, forms a *primitive addition* of mineral or inorganic matter to the soil, while by plowing in green crops we return to the land only the inorganic salts which the plants have taken from it during their growth—the rest is organic matter.

Plants require all their constituents present in the soil, in small quantities at least, to furnish a full crop. Hence the principle that the more various the fertilizing materials added to the compost heap the better, if a good supply of dry muck be supplied to absorb the ammonia produced by decomposition.

Potatoes and tomatoes flourish best in soils which are not very rich in nitrogen. Pig manure and night soil are not useful for these crops unless very minutely divided by loam. The chief ingredients of potatoes are carbon, in the shape of starch in the inorganic portion, and potash in the organic constituents. Hence fresh muck and ashes are the best fertilizers.

Turnips require less organic matter (loam or mould) than many other crops. Their chief constituents are phosphates of lime and potash.

Pert meadows require sand to render them fertile as imperatively as sandy soils require muck.

And so I might go on through fifty, or any indefinite number of columns, giving facts and principles observed in reading, which are worthy of being specially noted and remembered. I have taken these few passages at random from some works lying near me at this moment, partly copied and partly made up from hints which met my eye. I have done this, not so much on account of the great value of the facts set forth, as for the purpose of showing the student in these matters how much clearer a fact looks, and how much more easily it may be studied and remembered by separating it from the substance of a volume as above.

Now, if the reader of this article had just read the works from which the quotations are made up, and then had exercised his eye and mind and hand in the art of selecting and writing down the passages, we should readily suppose that he would be more apt to remember them than if he had only glanced an eye over them in the comparatively *passive way* of reading. I trust that the valuable suggestions here

given will not be lost upon young readers who are ambitious of acquiring knowledge.

Condensation of Vapor and Electricity.

It is found that the condensation of water in the summer sky is always attended by a great development of this unseen and mysterious energy—be it fluid, vibration, force, or whatever else we choose to call it. The more rapid the condensation the more copiously is the electricity developed. Which is the cause and which is the effect, it is impossible to say; but the two phenomena accompany each other in a very remarkable manner.

This connection between the development of electricity and the condensation of aqueous vapor, which was for a long time known only to exist in the case of the thunder-cloud, has since been found to be universal. The attention of scientific men was called strongly to this subject by an incident which occurred to an engineer in charge of a locomotive near Newcastle, England, in 1840. This engineer happened to pass one hand very near the cloud of vapor which was issuing from the escape-pipe of his engine, at the instant when the other was in contact with a metallic handle attached to some part of the machinery. The combination happened to be such as to make his body part of an electric circuit, and he experienced a sudden and quite powerful shock.

This incident led to a more thorough study of the electrical phenomena connected with the condensation of water, and it was found that electricity could be excited in any quantity by this means.

In the case of the condensation of vapor in the atmosphere, so long as the cloud remains small, the presence of the electricity does not manifest itself by any outward sign; but when it becomes large and very dense, and especially when it is rapidly formed, the electric energy becomes excessive, and it produces two effects strikingly manifest to the senses—a brilliant chain of forked and glittering light dazzling the eye, and a series of tremendous detonations and reverberations overpowering the ear. The direction of the line of light is often toward the earth, and by the very remarkable effects which are produced at the termination of it we know that in some way or other a force of very extraordinary intensity has been transmitted from the cloud to the ground.

The discharges, as we term them, take place sometimes in very quick succession, showing that the electric energy is very abundantly developed, and in such cases the condensation of water goes on in an equally extraordinary manner.

This state of things continues for several hours. The two effects—namely, the development of electricity and the condensation of water—go on together, the one keeping pace, to all appearance, exactly with the other. The electricity, as it is developed, discharges itself in glittering lines of light darting through the air. The water descends, by its gravitation, to the earth in a deluging shower. During all this time the cloud moves slowly on from west to

east, increasing all the while in density and extent, until the heavens are black with it, and the earth for a region of many miles is thrown into deep shadow.—From "The Mysteries of a Thunder Shower," by JACOB ABBOTT, in *Harper's Magazine*.

THE AIR WE BREATHE.—Dr. Angus Smith, of Manchester, England, who has been analyzing the air we breathe, for twenty-five years, has studied in detail the forms of the atoms which we see in sunbeams. The air is charged with tiny scraps of whatever is knocking about in the neighborhood we live in, coal in the mining districts, cotton in the spinning districts, hay and straw in the agricultural districts, stone and horse refuse in the busy streets, iron in the railway carriages. In these, he says, "we breathe rolled plates of metallic iron, which are large enough to be seen by the naked eye." And mingled with all are those dormant, mysterious germs of plant and animal life, which, after a few days' steeping in water, throw off their torpor and appear as living plants and animalcules. He has shown us what we cast out from our lungs—the sewage of the atmosphere—and told of the wonderful scene of life which is developed in a drop of condensed breath from the wall of a crowded room. The taking in the "sewage of the atmosphere" is what most people seem to enjoy. They go to churches, church lecture rooms, none of them ventilated at all, in none of them any circulation to change the air, to theatres and concert rooms, where they pack in and taste each other's sewage for hours together. Delicate, fastidious women, who would not brush their garments against the clothes of the theatre-loafer, nor soil their hands by the touch of his, will sit a whole evening and exchange breaths with him, the inmost for the inmost, as the Germans would say, in a room scarcely ventilated at all; but where the used air might be changed for fresh air constantly. And architects will so build churches and theatres, and halls, so long as the people submit to it as meekly as they now do.

Cotswold Sheep.

Of all the improved breeds of sheep which have been imported from England, we believe that none have given so much satisfaction or proved so remunerative as the Cotswold. [*See Frontispiece.*] They are a very large breed, with a long, heavy fleece, hardy, easily kept and very prolific. For mutton they are generally considered superior to the Leicester and equal to the South Down. Two year old wethers, at fourteen months old, have been known to weigh twenty to thirty pounds to the quarter, and the wool, though rather coarse in texture, frequently weighs from seven to eight pounds to the fleece, measuring six to eight inches in length. In addition to this, their hardy nature, their faculty of thriving without much attention, the prolific character of their ewes, and their

excellence as nurses, drew the attention of sheep-raisers to them as well adapted to this country, and the experiment, wherever it has been made, is said to have been quite successful. When crossed with the South-Down or Leicester, the result is a perfect breed of sheep.

We copy the following additional information in relation to the Cotswolds from *Deitz's Journal*:

The Cotswolds are a large hardy breed of English sheep, big-boned and long wool, and well adapted to hill range. Mr. Wm. Weld, of Ontario, Canada, is a breeder. Our farmers will find the Cotswold sheep a hardy race that will stand more exposure than most other breeds, and they yield more wool of a good quality than any other breed, therefore their large carcass and the large quantity of wool that they turn off, make them a very profitable breed. Cotswolds are extensively employed for the improvement of other breeds, and are preferred by all sheep breeders for their large size and superior hardiness. Cotswolds are noted for their large dimensions, and have a propensity to fatten, arising chiefly from their wide frame; quietude and open texture of flesh which is of quick growth, and, consequently, expands itself more rapidly than in sheep of other qualities.

Cotswolds have for many years been sought after with a view to increase the size, and form and wool qualities of our small sheep, and already the influence of the Cotswold blood can be seen in the sheep of this country, and these crosses are eagerly sought after for breeding and for fattening for the butcher. In taking a general survey of the sheep of this country, I cannot see why farmers will persist in raising the small sheep that has no carcass to feed on, and one that only turns off two or three pounds of wool, when they can get sheep that will weigh from two to three hundred pounds, and turn off from six to ten pounds of wool, and long wool that an increasing demand calls for each year. According to the situation of the farm and the nature of the pasturage must the sheep farmer manage his flock. Perhaps common Merino, South-down, Bothwell, and their crosses, will be found good, but on good land and good pasturage the Cotswold strain should be preferred, if he wishes to have due hardiness and fertility, and the increase of weight and wool.

A NEW VIEW OF IT.—The heathen emblem of the snake holding its tail in its mouth has always been explained to mean "eternity." We should think it typical of "life" rather, as indicating a continual effort to make both ends meet.

A GOOD RETORT.—"The newspapers of your party are perfect nuisances," said a politician to his opponent. "That's just what thieves think of magistrates," replied the other.

A VAGRANT was arrested, but claimed he had a trade—smoking glass for solar eclipses. Owning to their rarity he is not working full time.



For the Southern Farm and Home.
Hints on Horse Flesh:

As FIVE years are required for the completion of the bone structure of the horse, it is important that he be carefully used until that age. If he is early overworked, the ligaments, which unite his one hundred and thirty bones are prevented from becoming sufficiently fixed to the frame; he is dwarfed, and wears out or dies long before reaching the full twenty years which should be the average duration of his life and vigor. The muscles of a horse ought to be thick and long. Thickness ensures strength, and length an extended sweep of limb. Properly constructed harness is as essential to the comfort of the horse as easy clothes are necessary to man. If harness is not well fitted to the form, the veins are compressed, circulation retarded, and disease ensues.

When in motion, the horse regulates his centre of gravity by using his head and neck. The check rein is inhuman and injurious. If a horse is compelled to run when his head is held in a vertical position, the gravity is thrown too far back, and he advances with difficulty.

The ears may be called indices of the mind. Intelligent horses prick up their ears when spoken to; vicious ones throw them back; a blind horse directs one forward and one back; in a deaf horse they are without expression. The ears should be short and wide apart, the eyes well open and forehead broad. A broad forehead indicates good brain.

The horse breathes by his nostrils, hence the nostrils should be large, so that the fresh air may be taken in freely. Jockeys enlarge the nostrils by artificial means.

The mouth of young horses are round and smooth; in age it becomes narrow, wrinkled and elongated. The Arab says, speaking of his horse, the first seven years for my young brother; the next seven for myself, and the last for my enemy.

A horse has only one jugular vein.

The withers cannot be too high. The higher they are the easier the animal travels.

The loins short, chest square, and the shoulders well developed.

No foot, no horse. The hoof is a curious and complicated mechanism—an elastic box which expands and contracts as the horse raises or puts down his foot. Shoeing should be done with skill, or the natural form of the foot will be destroyed.

So noble an animal should be treated with great kindness, and no pains spared to make his bonds as easy to wear as possible. G.

Dry Earth for Bedding Stables.

Of late much has been said and written about "earth closets," and their use seems to be appreciated as disinfectants, and as a source conducive to good health. Dry earth has also been used to some extent for bedding stables and found to answer all the good purposes expected from it.

It would be useless to discuss with a farmer the value of stable manure. He knows very well what it is worth—that it is superior to all other manures; the only difficulty with him is to get enough of it. He knows also that it is not always valuable in proportion to its bulk—one cart load of well concentrated manure being equal to two or more loads in a coarse, rough state.

Straw is almost as dear in the market as the best of hay, therefore it has become too expensive an article to bed stables with, and the farmer who uses it freely for that purpose has not an eye to strict economy. The substitute that we can recommend is *dry earth*. Every farmer has plenty of it. Let any kind of soil or subsoil be collected and put under cover, convenient to the stables, to be used as required. This can be done at any season of the year when the ground is not frozen, and an hour or two can be spared from other work; there are many such spare hours in the course of the year that could not be better employed, or even whole days.

The earth should be spread over the whole surface of the stable floor three or four inches deep to begin with, and as it becomes saturated with urine add fresh earth until it becomes six, eight, or more inches deep. When all of it is

thus saturated, it may be removed to the manure heap along with the excrementitious matter of the animals. Whenever, on entering the stable, you find any offensive smell arising from the floor, add more fresh earth, until the odor is all absorbed. In this way all the valuable manurial salts are saved, locked up, so they cannot be wasted, until carried to the field and incorporated with the soil to feed succeeding crops.

The health of the stock is promoted by having the atmospheric air of the stable kept in a pure state for breathing. A little plaster of Paris sprinkled with the dry earth on the stable floor will be of some advantage as an absorbent of the manurial salts.

The natural resting place for animals to lie down on is the face of the *earth*. They always arise from this natural bed refreshed and full of vigor. After a stretch and a shake of themselves, they feel as if a new life had been infused into them, and they go forth to the duties of the day with a freshness that is pleasant to behold.

Now, this natural bed of earth to lie down on is furnished exactly suited to their nature, their wants, and their condition, by a good coating of soil, kept and frequently renewed on the stable floor.—*American Stock Journal*.

Summer Management of Horses.

A MEMBER of the Royal College of Veterinary Surgeons, writing to the *London Times*, exposes the fallacy of the popular belief that a horse is benefitted by "a month's run." He says that now pastures are beginning to look green, and the weather promises to become warm, owners are thinking of giving their horses a treat by turning them on to grass. "I have worked my horses hard," say they, "and they need a summer's run. It will rest their legs and feet; besides, green food is the natural provender for horses, and they will enjoy a few months rest at grass and be all the better for it." It is all very well for the young animal, protected by long hair, lengthy mane and tail, whose time, while young, has to be got over one way or another, and it is found convenient to let him forage for himself; but with the stale and "groggy" horses requiring rest, and whose owners turn them out with this object, the matter is entirely different. "Rest," properly so called, is not to be had in the pasture. In the simple process of gathering his food the horse walks many miles during the twenty-four hours if the pasture be bare, and the same process obliges him to throw extra weight on his fore legs and feet, which it has been the intention of the owner to "rest." Besides, in the summer months witness the poor horses huddled together for shelter from the myriads of insects which surround cattle when grazing, and watch them nervously tossing their heads, switching the tail, stamping, and thus jarring the feet and legs, moving to and fro in the vain hope of escape from their tormentors, and ask if this be "rest." When the sun is powerful the feet become hot and parched, the horn is rendered brittle, and breaks off in pieces. Besides, no-

thing throws a horse so soon out of condition as green food. The consequence, in eight cases out of ten, is that the animal comes up from the grass in much worse form than when turned out "to rest"—if he escapes getting staked or being kicked by his companions. What, then, is the best method of dealing with horses in the summer, when either rest is a necessity or otherwise desirable? Put them into a loose box or shed, well littered with tanbark, sawdust, or straw, or all combined; remove the shoes and rasp off the sharp edges of the crust, to prevent them breaking, supply water without stint, give a liberal allowance of oats, Indian corn, and bran, with cut chaff and hay, the whole of which will be better for being made ready damp with water. If on the part of the owner there is a predilection for green food, give it in small quantities, mixed by hand with the hay, always remembering that the fat which it invariably produces is so much lumber, not condition, and that when the horse returns to work the fat is thrown off at the cost of additional wear in the feet and legs.

From the Constitutionalist.

The Angel in the Flame.

BY A WORKINGMAN.

At life's noisy anvil tolling
Should your pulses beat too high,
Do not mind a little broiling,
Rest shall yours be by-and-by;
If with brawn of arm you're striking,
Or with sweat of brain are worn,
Things may not be to your liking,
But they'll mend not if you mourn.
Oh faint not in the noble strife,
To fashion well your place or name,
In every upward glow of life
There is an angel in the flame!

Though should mighty glooms be lurking
O'er the threshold of your aims,
Eyes beyond still watch your working,
Hearts around still own your claims;
Falter not then at the blunders
That befall for want of light,
You shall yet accomplish wonders
If you smite for truth and right.
Oh faint not in the noble strife,
To fashion well your place or name,
In your upward glow of life
There is an angel in the flame!

Lofty efforts!—keep them turning,
Till such weapons you have made
As shall bring immortal earning
When your sturdy strokes are stayed;
Strong endeavors!—keep them ringing
Till life's fervent work is done,
Then shall you sit down with singing
Over more than conquest won.
Oh faint not in the noble strife,
To fashion well your place or name,
In every upward glow of life
There is an angel in the flame!

Horace Greeley says that the darkest day in any man's career is that wherein he fancies there is some easier way of getting a dollar than by squarely earning it.

Horticultural Department.

The Vegetable Garden.

TO THE skillful and attentive gardener, the month of August is the opening of a second spring. Should there be the usual rains this month, many seeds may be planted, including parsnips, turnips, carrots, spinach and lettuce for early spring use; and English peas and snap beans if sown now and well mulched will generally yield a good crop.

Cabbages to head in winter should be transplanted now. The second planting of Irish potatoes should be made at once, and corn for late roasting ears may still be put in. This is a good month to set out button onions and sets and to sow onion seed. Onions that have not yet been pulled should be taken up now, *dried in the shade*, and spread upon a shelf where the air can circulate about them. When thoroughly dry they can be tied in bunches or in nets and hung up for winter use.

Pot herbs should be gathered, dried in the shade, and put up in paper bags.

Mulch egg plants and young peas and beans, and indeed all transplanted vegetables. Plant cucumbers for pickling. Save the seed of the earliest and best vegetables. Dry them in the shade. Exposure to the sun frequently destroys their vitality. Exterminate all seeding weeds. Top the okra and allow no pods to ripen but those intended for seed. Pinch the ends of the running beans, thus stopping the growth of the vines and doubling the crop of beans. Keep the strawberry beds clean and free from runners, and towards the end of the month dress them with a compost of wood, earth, and leached ashes.

We wish that some of our friends who have been in the habit of getting nothing during the winter from the "truck patch" except a scanty supply of long, spindling collards, would try to make a winter garden. A very little trouble and attention will secure an abundant supply of most of the hardy vegetables. In nine years out of ten the effort will be successful.

The Flower Garden.

THE directions for the work in this department are substantially the same as those for July. This is a good month to bud and layer roses. Prune fully one-half of the young growth of roses, and they will soon put forth new shoots and bloom again until frost. Col-

lect bulbs to plant in September and bloom early next Spring.

There are many perennial and biennial flowers which if sown towards the end of this month will bloom early next year. For a list of these we would refer our readers to the illustrated catalogue of James Vick, Rochester, N. Y.

A little attention on the part of the ladies to the flower garden during this and the ensuing month, and with a very trifling expense, will secure a beautiful show next spring.

The Orchard.

GATHER fruits as they ripen, and where they are too thick on the limbs, thin them. Burn the cocoons of the miller and the webs of the caterpillar. Every cocoon consumed prevents the ravages of five hundred worms next spring.

Young fruit trees should be worked with the hoe. Trees or vines infested with lice should be sprinkled early in the morning with guano or plaster. Competent fruit growers assert that this is an effectual remedy. Summer pruning, *where necessary*, should be continued.

The stocks of all fruit trees may now be budded, and cleft grafting, particularly on pears and plums, may be successfully accomplished this month.

Save the pits of every good peach and plant them immediately. Save the seeds of all good fruits. We have great faith in seedling fruits for our country.

New strawberry beds may be set out towards the end of this month. In our experience we have no variety so good in quality and quantity as the Wilson's Albany. We have tried and partially succeeded with several other kinds, but none equals the Wilson Albany. Beds planted this month should be heavily mulched.

Summer Pruning of Grape Vines.

In the garden of a friend in Northern Georgia we have recently seen a practical illustration of the advantage of liberal pruning of grape vines in summer where the growth is unusually luxuriant.

The vines are trained on trellises, have very vigorous growth, and are filled with bunches of fine grapes. From the time the fruit commenced to form, the vines were pruned at the fourth joint from the bunch, and all side shoots carefully rubbed off. The result is as fine a yield of sound fruit as we ever saw.

In a garden, in the same neighborhood, where the pruning scissors were not used at all, for fear of doing injury to the vines by causing them

to bleed (a commonly erroneous belief, by the way,) and where none of the lateral shoots were removed, we found the fruit much smaller, and in many places exhibiting signs of rot.

We are satisfied, from a comparative view of grape vines in both gardens, that to spare the pruning scissors in summer is to spoil the grapes.

For the Southern Farm and Home.

Trees and Shrubs.

BY THE LATE WM. N. WHITE.

"Ay be sticking in a tree, 'twill be growing while ye're sleeping," said the old laird of Dumbiedikes on his death bed to his son; and it was beautiful and sound advice. Too many of our farmers neglect this, and their children are deprived of the shade and shelter which a few fine trees would give, and which would also make their dwelling much more beautiful and attractive. Woodland every farmer must have. Let him place it near his home, occupying the rocks and heights, and in belts, to shelter from the prevailing winds. In his pastures let trees be left standing on gentle eminences, and about the brooks. Let single trees be left here and there, and the thickets thinned for timber, for thickets are planted in this way, singly or in groups. His home is thus made beautiful, while his park is profitable.

"Trees are the darkest part of a landscape, and correspond to the shading in painting." It is clear then that a landscape can no more dispense with trees than a picture could do without shading. Even the smallest places should boast of one or two fine trees; and in every place it is desirable to introduce as many different species and varieties as will thrive in the space allotted to them; having but a single plant of each kind, or introducing duplicates according to the extent of the grounds. As the object is generally ornament, novelty and variety, this would be better attained by selecting trees foreign to the country or locality, and especially should the preference be given to exotics, when the grounds are so small as to admit but very few trees. In this case indigenous trees should be entirely excluded, unless greatly improved varieties, or species exceedingly beautiful, are chosen. But when native trees already exist finely grown, they should be carefully preserved, for the growth of a life-time may often thus be saved. In large places indigenous trees should be planted for the purpose of rendering the collection of sorts complete,

and also for harmonizing the woods of the residence with those of the grounds adjacent. And where the plantations are joined to natural woods, the line of separation should be concealed by adopting the same species of trees, and also by an intermixture of styles. In all cases those trees should be chosen which are likely to thrive best in the situation.

Near the house the most rare and beautiful species and varieties should be planted. Here also the prevailing kinds should be evergreen, and these should be introduced to a greater or less extent in all the woods of the place. Among deciduous trees a considerable portion of the shrubs should be evergreen, and where the trees are mostly evergreen, some of the shrubs should be deciduous. But too many deciduous plants should not be chosen unless the foliage is beautiful, for the bloom is generally of short duration. Care should be taken that nothing coarse or common is planted along the edges of the walks.

The avenue is not much employed in modern gardening, and the group has taken its place. If there be but three trees, these are thus connected, and parks are composed of a succession of groups. But a group is as diverse as possible from the regular "clump" of trees of the same age and growth, but without the flowing and varied outline of the group. Groups are full of openings and hollows.

To make a group, do not plant in a regular triangle, square, or curve; but when three trees have been formed into an irregular triangle, plant at the salients of this, and do not fill up the bays. Intersperse occasionally trees of smaller size and lower growth at the borders, so as to break up formal sweeps.

In graceful grouping, trees of flowing outline must be chosen, and *generally* planted distant in the groups to give them full development. Rich creepers and vines may be occasionally suffered to fall in luxuriant masses from a tall tree. A smooth stem, a tender bark, and a softly-rounded or drooping head, characterize a graceful tree. To create this, cattle must be kept from it, and it must be frequently manured. The lower branches should remain untrimmed. The effect of a single tree is often very different from that of an entire mass, and every tree or group, however detached, must appear to belong to some group or mass—it must not stand alone and disconnected. Fine open glades must be left for the sun to brighten and so shed an air of cheerfulness over the whole landscape.

In picturesque grouping, trees of that character predominate. Everything depends upon intricacy and irregularity of grouping; single trees are rarely allowed. The grouping is more close, sometimes two trees are in the same hole, and all touch each other more or less. Vines may climb wildly over them, and the glades are bounded by thickets of every form.

All groups should be made with reference to the production of a whole, and the proper connection of its parts, and their adaptation to the grounds.

A picturesque plantation should be softened with graceful beauty near the house, and the graceful should often rise into the picturesque.

(TO BE CONTINUED.)

For the Southern Farm and Home.

How to Grow Cabbage and Collards.

Mr. Editor: As these are important garden vegetables, will you permit a suggestion as to their culture?

Manure your land well broadcast; put in a large two-horse turn plow; run twice in the same furrow, and follow the second with a good subsoiler. Break the patch in this way; level it off, and run your rows with a four-inch scooter plow. Set your plants in the bottom of this furrow. As soon as they have grown a little, fill this furrow level with the surface, and cultivate with a Dickson sweep, or what is equivalent, simply weed off the grass and weeds with a hoe. Let no spade or subsoiler be used, but surface culture entirely. This will keep the surface of the patch level, and, if the soil be rich enough, the crop will be fine. I have now fine large cabbage heads, and collards that will measure four feet nine inches across. Under the deep culture system I could not, in my sandy land, raise a collard or cabbage; but adopting the Dickson system of culture, I can raise them abundantly.

By-the-bye, I see that Mr. Dickson has given us his *system* of farming in book form. What a treat? It is worth its weight in gold to every one who will read, study and practice it on the farm. It is published by J. W. Burke & Co., Macon, Ga., and ought to be in the hands of every farmer and horticulturist in the South. His system of culture will do for collards and cabbage, as well as for corn and cotton. Let your readers try it.

HORTUS OLITORIUS.

June 20th, 1870.

For the Southern Farm and Home.

Crop Prospects, Labor, Labor-Saving Implements, the Dixie and Brinly Plows.

Mr. Editor: This beautiful farming country of the South has had fine seasons up to date—if anything, too much rain in some neighborhoods—hence crop prospects are very fine. The trouble is, the scarcity of laborers to assist in the harvest, as well as to help in cleaning out some crops which are foul. So much work is going on outside of the farms, such as brick yards, making tan-yards and town improvements, that it is an impossibility to procure extra hands for farm work. As such, some farmers have been compelled to give one-third and one-half to have to have their oat crops harvested. This condition of things will increase upon us, labor will become more scarce, as improvements and building will annually become more general. As such, our farmers had best prepare for such difficulties by making up their minds to use labor-saving implements. We have to come to it, and the sooner the better. Large plows, cultivators, harrows, reapers and mowers have to be used to make up for the scarceness of laborers. To show the advantages of such implements, this year I broke up and turned over my fields with large two-horse plows. From the size of the plows, the work was not only rapidly done but thoroughly executed; hence I was enabled to cultivate my crop with the double shovel steel plow, each plow doing the work of two, which was equal to two hands and two mules. And had I not been hindered by so much wet weather, my crop would have been kept as clean as a garden. With the old one-horse implements, I must have been used up, as I have a heavy crop to the hand.

I am fully persuaded, from this year's trial, of the advantages of these labor-saving improvements, and I regard the double-shovel plow as far superior to the cultivators, as they break and pulverize the ground thoroughly, should it have been run together by rains and baked by hot suns. In a word, it is an effectual plow, and the draft on the animal is no harder than our common shovels, made by the blacksmiths of the country. And this plow can be made more useful by placing a scooter on the right foot in the place of one of the shovels, when running round young corn or cotton the first working.

Commence in the fall or early winter with the Brinly No. 3 two-horse plow, or with the Dixie No. 2 two-horse plow, which is manufactured

by P. H. Stark, in Richmond, Va.—two of the best land-breaking plows to be had—and put your land in thorough order with them, and you will find no trouble in cultivating the crop with the double shovel plows; and twenty-five acres of land can be thoroughly cultivated with them with more ease and satisfaction than fifteen are with the ordinary plow used in the country.

Mr. Brinly has just made a plow, which he calls the "Brinly Sticky-land Plow," that he will send to me in August, to start against the "Dixie plow" in tenacious, heavy red loam lands, which tries the efficacy of any plow. In those two plows I look for thorough, perfect work; which will master a soil heretofore considered too stubborn to be overcome by any plow. The "Dixie" last fall and winter mastered it, hence Mr. Brinly, with his accustomed energy and ambition not to be excelled, has put up a plow not to be outdone. I look for great things from that plow. I am now nursing up a fine growth of weeds on my stubble lands, by keeping stock out of it, so as to give those two celebrated plows a fair and thorough trial this fall in breaking and fertilizing. My corn crop now growing shows what they did last fall in preparing the land, it having been broken up with a "Dixie" and "No. 8 Brinly plow."

All who prefer it, may use the commercial fertilizers, but give me such plows with a rank growth of weeds, clover, stubble and litter, and rotate your crops, and I'll show a fertilizer permanent and efficient. In fact, we need none of the commercial fertilizers, until we first learn to put our ground in order with suitable plows. All manures are but thrown away when used on fields imperfectly plowed.

JNO. H. DENT.

Vann's Valley, Ga., July 15th, 1870.

For the Southern Farm and Home.

Mr. Bateman's Cotton.

Mr. Editor: I promised you that I would let you hear occasionally this year from my pet cotton lot. I will try now to comply with my promise.

The manner of preparing and planting of the lot is described in the March number of the *Farm and Home*. The cotton in the lot is now about waist high to me, and I stand six feet three inches high. The rows are feet wide, and the cotton is beginning to touch in the middle of the rows. I planted the Dickson variety of seed, and that species of cotton does not spread much. Had I planted any other variety of

cotton, I would have laid my rows off six feet. The cotton at this time is very full of young bolls and forms. It is the most gorgeous looking patch of cotton I ever saw. I wish you could see it.

A gentleman looked at it to-day and decided that there were forms enough on it at this time to make one and a half bales to the acre.

If the seasons are favorable, and no disaster befalls it, the cotton in the patch will astonish the natives. Very respectfully,

B. M. BATEMAN.

P. S.—I have eight stalks to the yard, and hope to make twenty bolls to the stalk; that will give one hundred and sixty bolls to the yard.

B. M. B.

Near Byron, Houston co., July 5, 1870.

Household Department.

Domestic Receipts.

BY MRS. WM. N. WHITE.

HOW TO IMPROVE CIDER.—Take new cider from sound, good fruit, sour to be preferred; let it ferment from one to three weeks, as the weather is warm or cool. When it is attained to lively fermentation, add to each gallon, according to its acidity, from half a pound to two pounds of white crushed sugar, and let the whole ferment until it possesses precisely the taste which it is desired should be permanent. In this condition add "Spear's Solution," the exact quantity see in directions on the bottle. Agitate briskly and thoroughly for a few moments, and then let the cider settle. The fermentation will cease at once. When after a few days the cider has become clear, draw off and bottle carefully. If preserved in bottles, carefully corked, it will become a sparkling wine-like cider, and may be kept indefinitely long.

We have found, also, that adding simply two pounds of sugar to the gallon of partly fermented cider, reserving some of the cider to keep the vessel full, and thus forcing the impurities cast up by fermentation to overflow, makes a nice cider, which carefully bottled will keep perfectly. The cider should be pure, and every thing employed in the manufacture perfectly sweet. This cider is very nice in mince and other pies; also in sauce for boiled puddings. Boiled cider is made by simply boiling in a porcelain kettle two gallons till it is reduced to one.

BLACKBERRY WINE.—Take a bushel of ripe berries, bruise well in a tub, and pour over them two gallons of pure boiling water; let it stand until cold and then strain. To each gallon of juice add three pounds of white sugar. When the sugar is dissolved, put the liquid into a vessel that will just hold it, and let it stand in a moderately cool place, without corking, to ferment. While fermenting, keep the vessel full by adding berry juice or water as the quantity is reduced by fermentation. When fermentation has ceased, cork closely and let it stand without being disturbed till December; then draw off, and to each gallon of wine add two ounces of mashed raisins; let it stand another month or more, and then you have a wine almost equal to the best Catawba.

PRESERVING GREEN CORN.—Boil the corn (on the cobs) until it is thoroughly scalded, then cut from the cobs, and dry on earthen plates in the sun. Three or four bright, sunshiny days will dry it sufficiently. If well dried and kept in a dry place, corn prepared in this way will keep any length of time, and boiled with beans in the winter, makes a very palatable dish. Beans and peas may be preserved in the same manner.

RICH SOUFFLES.—Soak in white wine and a little brandy, sweetened with sugar, some slices of sponge cake; put the slices in a deep dish, and pour over them a rich boiled custard; beat to a stiff froth the whites of three eggs, and lay it over the top in heaps to look rough; place it in the oven to brown, and serve at once.

FARMER'S PUDDING.—Heat one quart of milk to boiling, then stir in slowly one teacupful of maizena. Mix with this about six large apples, pared and sliced, and add two tablespoonfuls of sugar, one of butter, and a little allspice and nutmeg. Pour the whole into a deep dish and bake until done, which will be in about forty minutes. Eat it with rich cream sauce.

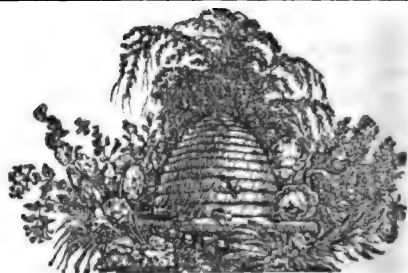
FARMER'S PIE.—Put the yolks of four eggs and the whites of two, with a quarter of a pound of white sugar, in a basin; beat them all together; then add a quarter of a pound of butter, melted; beat this all together till it is quite thick. Line a dish with light puff paste, spreading on it a thick covering of jam or preserves; pour on the above mixture, and bake it in a moderate oven. Take the two whites of eggs left from the pie, beat them to a froth, adding two tablespoonfuls of white sugar. When the pie is done, spread it evenly on the top and return it to the oven a few moments to brown.

SURPRISE CAKE.—One large cup of sugar;

one cup of sweet milk; one-half cup of butter; two and a half cups of flour; two teaspoons cream-tartar, one of soda, and one egg. To be eaten warm, with wine sauce.

DRYING APPLES AND PEACHES.—Select good sound fruit, not over-ripe; pare them carefully, take the cores or pits entirely out, and cut in as thin slices as patience will allow. Be very careful in thoroughly drying them of a bright color, and the difference in the price obtained over the ordinary rough-cut, dark-colored and not well cored apples will more than pay for the time and trouble of so doing. You can't make a bright-colored dried apple or peach out of mellow ripe fruit, and the light-colored fruit will find a quick market.

CLOVE CAKE.—One cup of molasses, two-thirds cup of buttermilk, four tablespoonfuls of butter, one teaspoon of soda, one teaspoon of cloves, one egg.



THE APIARY.

AUGUST.

OPENING hives or removing surplus honey should now be done early in the morning, after sunset, or on a cool day, exposing the honey as little as possible to tempt the bees. Boxes nearly filled with clover honey may be removed before buckwheat honey, which is darker, is stored with it. If any stock remain queenless, divide any buckwheat swarm that may issue, and give it the half containing the queen, returning the other half to the parent stock, or any small colony or nucleus may be united to the queenless stock. Buckwheat swarms are easily made good for winter by giving them frames of honey or empty comb. If wild bees are in the vicinity, line them from fields of buckwheat. When the flowers begin to fail is the time of greatest danger from robbing; avoid it by taking care of colonies too weak to defend themselves. The beginner, if fearful, may wear a bee hat, or carry a smoke in the hand when about the stocks, blowing a little into any near by, if irritable. When rags for smoke are not at hand, dry rotten wood may be used, and is an excellent substitute.

In the general work of the apiary, such as removing combs, queen-cells, boxes of honey,

etc., we seldom use anything but smoke from a roll of cotton rags. These rolls should be an inch or more in diameter, and rolled just tight enough to burn and not blaze, and should be kept on hand with some matches in a dry place near the apiary. When a stock is to be opened, light one end of a roll and blow a few whiffs of smoke into the entrance, wait a few moments for the bees to fill themselves with honey, then blow in more smoke and remove the cap, loosening the frames with a knife, direct a little smoke between the combs, and proceed to perform any operation desired. If other stocks are close and the bees interfere, blow smoke into the entrance of each hive. Toward fall, when bees have become rich in stores, they are harder to control. They are also more irritable in cool, cloudy weather, which prevents them from visiting the flowers. At such times, a little smoking tobacco scattered upon and rolled up with the rags, will effectually tranquilize them. Or, if addicted to the use of the pipe or cigar, the rags may be saved. In short, by the use of smoke, timely given and repeated as needed, bees may be kept in subjection for any length of time. Some use water, sweetened with sugar or honey. Sugar is preferable,—as the scent will not so readily attract bees from other hives. Sprinkle it upon the bees with a small clothes broom. Give them time to fill themselves, and they will have no disposition to sting. The sweetened water is very useful in uniting, and for keeping swarms quiet when away from their combs. Although, by using care and gentleness in our manipulations of the hive, the risk of being stung is small, we advise the beginner to use a veil for the face until he has gained courage and experience, when it may be dispensed with. This veil may be a piece of coarse black millinet, fastened to the rim of a summer hat, and tucked in about the neck. The rim of the hat holds the veil away from the face, making it safe, cool, and comfortable.

For a screen to carry in the pocket, to use when away from home on any kind of hat, get one-and-a-half yards of millinet, or any coarse, open stuff; gather one side of this into a band that will slip over the crown of the hat down to the brim. This may be secured with a string under the vest collar. If the fabric used is dark-colored and very coarse, it will not tire the eyes or scarcely obstruct the vision.

When at work among the bees, avoid making quick motions or jarring the hives. If a bee come buzzing *threateningly* about, never strike, but keep your head bowed and the rim of your hat and your hand will protect your face. Should the bee refuse to leave, walk quietly into the shade of a tree or into a building. The poison of a bee sting may often be neutralized and swelling prevented, by quickly applying strong spirits of hartshorn. Amusing feats may be performed with bees, when filled with sweets, by confining the queen in a small wire-cloth cage and fastening it upon the hair, whiskers, or in your hat, when the swarm will harmlessly cluster around their queen.

If not already done, the bee-keeper may Italianize common stocks during this and the fall months.—*Beekeeper's Text Book.*

From the Southern Planter and Farmer, Richmond, for July.

Bees.

Mr. Editor: Your correspondent, H. W. Cosby, wishes some information in relation to bees and their hives. I have had an experience of over thirty years in raising bees and honey, and have been quite successful. I have seen many kinds of hives, bee houses, patent hives, etc. I am convinced, from my experience and that of others, that the ordinary hive made of inch plank, with a cap on it one-third the size of the hive, is as good as any other.

I can raise as much and as nice honey in these caps as any one with Longstroth's or any other patent hive. The plank hive can be made and the materials furnished at twenty-five cents each. Formerly, I, like my neighbors, killed the bees to get the honey, and sometimes robbed the hives of all the best honey, but for many years I have abandoned that practice, because the best hives were taken, and with many they lost their whole stock, as some farmers have thin sheep by killing and selling the lambs until their old sheep die of what they call the rot, but really from old age. Now, I never interfere with the bees or honey in the hives, and take only that in the caps, so leaving a full supply in the hives for the bees to live on in winter. Contrary to the opinion of some, who do not know, the bees fill the hives before they will work in the caps.

The chief point to which I wish to call the attention of your correspondent and your many readers is, to a secure box or house to set the hive in, which I consider practically of more use and a greater invention, simple as it is, than any patent hive or bee house. It is made in the following manner: Take a plank 16 feet long, 1½ or 2 inches thick, 14 inches wide, for the bench to put the hives on, and three pieces of same kind of plank 2½ feet long for end and middle pieces, and with large nails fasten them perpendicularly to the bench, then nail on an inch plank ten or twelve inches wide, of same length as the bench and even with the top of the three upright pieces; then nail on another similar plank between the bench and the upper plank so as to leave a space next the bench of five or six inches, with a similar open space above, between it and the upper plank. Then make a lid of wide plank to cover the box on top, put it on with good iron hinges to open and shut, and attach a good padlock to lock the hives up. This effectually prevents freedmen and other rogues from stealing your bees and honey.

Previously to the invention and use of this box, I had the misfortune frequently of having my hives stolen. It preserved my bees in the several Yankee raids, when most people in that section lost all their bees, and no thief has ever interrupted my hives in them since. Such a box will hold about ten hives, and will cost for material and work about two dollars, making the whole expense not over fifty cents per hive for hive and box. By unlocking and opening the box you can put in or take out a cap when you wish.

On this plan, with watching, care and attention, no one can fail to succeed in raising bees and honey of the nicest kind in abundance.

W. A. GILLESPIE.

Louisa county, June 7, 1870.

Card.

OFFICE STATE AGRICULTURAL SOCIETY, }
ATLANTA, July 11, 1870. }

1. Notice is given that the office of the State Agricultural Society has been removed to most ample and suitable halls, with offices attached, in the basement of the Capitol. Members of the Society, and visitors to the city especially, and our citizens generally, are invited at any and all business hours to visit the library and reading-room and museum.

2. The thanks of officers and members of the Society are due John R. Dukes, Esq., President of the Wando Manufacturing and Mining Company, who, through Col. B. C. Presley, of the law firm of Presley, Lord & Ingolsby, presents specimens of fossil bones and teeth found in their phosphate mines—containing the sections of the vertebral of extinct Sauri, which were over thirty feet in length; the tusks of the Sea Elephant, (*Megalo Saurius*); sharks teeth four times the size of any living variety. Some of these specimens are impregnated with iron.

3. The following letter is upon a subject of such general interest as to justify publication. It was filed in this office by Judge Ezzard:

LAWRENCEVILLE, June 29, 1870.

Hon. Wm. Ezzard, Mayor:

DEAR SIR—President ORT informed me last week that he had a letter from Col. Lewis, inquiring whether he knew of any considerable quantity of pyrites on or near the line of any railroad in Georgia. Col. L. says our manufacturers of fertilizers wish to prepare their own sulphur of they can procure the pyrites.

Both copper and iron pyrites exist in any desirable quantities in the gold veins within one and a half miles of Sugar Hill, and south of that place on the Air-Line Railroad. I suppose many tons of the finest variety could be picked up among the rubbish on the top of the ground. It forms a large proportion of the ground which protects the veins of the gold, leaving quartz on either side. If the company to which Col. L. alludes will establish a depot at Sugar Hill, Ga., they will have no occasion to send abroad for sulphur. I do not know where Col. Lewis is at present, and therefore communicate this information to you that you may let all parties concerned know the facts.

I am truly yours, JAS. P. SIMMONS.

4. An appeal is made to the liberality of the Press of the State to send their papers regularly to this office without charge. The object of the request is manifold. This office has and

will have thousands of documents, circulars, etc., to issue; with fresh issues, daily and weekly, of the Press to spread out upon our tables, we will have at one view the names of perhaps twenty thousand business men in every department of industry, to whom we can send our documents. Again, the Library and Museum attached to the office are daily increasing in interest and importance. The contributions of the papers of the State will greatly add to this interest, and will make the rooms of the Society a most attractive resort to members and visitors from a distance while in the city. Assurance is given to all editors and publishers who will comply with this request that their files shall never be taken from the Library, and shall, after having answered the immediate wants of the office, become permanent files and preserved for reference and for historical and statistical inquiries, for which they will be more and more valuable with the lapse of time.

5. Delegates, and members, and visitors to the convention are urged, to consider if they cannot bring with them a few precious stones or other valuable contributions to the Museum. If each delegate should bring with him the most curious and interesting specimens, whether mineral, fossil, earth, plant, or other object in natural history, it would present at once a most interesting spectacle in itself and perhaps the highest evidence of the great variety of soil, vegetation, climate, and of the varied productive capacity of the State. Let all try.

6. Office hours from 9 A. M. to 4 P. M.

7. The Secretary begs the press to renew the favor of the gratuitous publication of the cards of this office.

DAV. W. LEWIS.

A Mixed Crop vs. All Cotton.

In a recent issue of the *Augusta Constitutionalist* we found the following interesting letter from a practical planter to General L. McLaws, showing by facts and figures the advantages of mixed husbandry as compared with the exclusive production of cotton.

The views of the writer are so plain and so well expressed, we take pleasure in reproducing them for the benefit of our readers. We cordially share the pleasure expressed by Mr. Hatcher at the "fact" which he says is "rapidly becoming evident, that our past practice of planting all or nearly all cotton and purchasing our provisions has not only been unwise and poor financiering, but suicidal." Experience is often a severe teacher, but if her teachings

are heeded, their harshness is forgotten in the amount of good that results from them. The following is the letter :

McBEAN, GA., 5th July, 1870.

Gen. Lafayette McLaws :

SIR—In accordance with your request, I send you a statement showing the advantage of a mixed crop over one entirely of cotton. The following statement is based upon two farms of equal fertility, and containing two hundred acres each. In order to cultivate them properly with the "fifteenth amendments," it will require fifteen hands to cultivate the two hundred acre farm, in cotton, and five good mules, and as they have to work the entire year round, it will take ninety bushels of corn and two thousand pounds of hay each. I estimate the wages per hand at \$15 per month, including their rations. It will require, to cultivate one hundred acres in corn and peas, one hundred acres in cotton, and fifty in wheat, ten hands and five mules. I propose to apply two hundred pounds of guano per acre under the cotton, and two hundred pounds per acre under the corn. The expense attending the cultivation of these crops is as follows :

Expenses of 200 Acres in Cotton.

Labor of 15 hands and rations.....	\$2,700 00
Corn for 5 mules, at \$1 75 per bushel....	787 50
Hay for mules.....	200 00
Cotton seed for planting.....	100 00
Bagging and rope for 66 bales cotton....	198 00
Freight and drayage, say 25 miles from market.....	115 50
Insurance and storage on 66 bales.....	40 00
Commissions on 66 bales cotton, at 18c. per lb.—com. 2½ per ct.....	148 50
For guano.....	1,600 00
Interest on \$1,000 at 12 per cent, to purchase provisions.....	190 00
Expense hauling provisions.....	50 00
Total expense.....	\$6,129 55

Expenses of 100 Acres in Corn and Peas, 100 Acres in Cotton and 50 acres in Wheat.

Labor of 10 hands and rations.....	\$1,800 00
Corn for 5 mules, 60 bush. per mule, (½ less than for cotton,).....	525 00
Fodder.....	50 00
Cotton seed to plant 100 acres.....	50 00
Freight and drayage on 88 bales.....	57 75
Bagging and rope for same.....	99 00
Guano.....	1,600 00
Total expense.....	\$4,281 75

Proceeds of Cotton Crop.

33,000 lbs. cotton, at 18c.....	\$5,940 00
2,640 bushels cotton seed at 25c.....	640 00
Total.....	\$6,580 00
Deduct expenses.....	6,129 50
Profit.....	\$ 450 50

Proceeds of Mixed Crops.

100 acres in corn, 20 bush. per acre, 2,000 bush. at \$1 75 per bush.....	\$3,500 00
800 bush. peas, at \$2.....	600 00
20,000 lbs. fodder, at \$2 per 100 lbs.....	400 00

16,500 lbs. cotton, at 18c.....	2,970 00
1,820 bush. cotton seed, at 25c.....	380 00
250 bush. wheat, at \$1 50.....	375 00

Total proceeds.....	\$8,175 00
Deduct expenses.....	4,281 75
Profit.....	\$3,943 25
Difference in favor of mixed crop.....	\$3,492 72

I am happy to say that the fact is rapidly becoming evident that our past practice that of planting all, or nearly all, cotton, and purchasing our provisions, has not only been unwise and poor financiering but suicidal. The exhibits of the commercial world clearly demonstrate that in the same ratio that we increase the production of cotton do we diminish its value and increase the demand for provisions, and consequently their price.

And as "self-preservation is the first law of nature," and as we are under no special obligations to send all of our money to the North and West for provisions, I hope we will be allowed to so reconstruct our planting interests as to keep our money at home, and thereby preserve the life of the goose that lays the "golden egg."

Respectfully, yours, etc.,

E. HATCHER.

Carbolic Acid—Diseases in Poultry.

We give the following extract of a letter from our friend, S. W. Passmore, Nottingham, Chester county, which only corroborates what we have heard before of the efficacy of carbolic acid in poultry diseases. He will please inform our readers how and in what quantities he administered it :

"After writing concerning the Ayrshire, and being at leisure, I thought I would give the history of the dozen Rouen duck eggs purchased at the office of the *Practical Farmer* last spring. I had seven hatched, raised six—five ducks and one drake—which have been much admired; but since the setting in of winter, the hen cholera, as it is termed, swept them away, duck after duck, until I had but two ducks and the drake left, which I still deemed sufficient for stock; but my consternation may be imagined when I found my drake attacked with the disease. His symptoms were in every way like the others, and I felt that death was certain, but having seen such great accounts of the use of carbolic acid, I thought I would try the effect on him, which I administered to him in weak doses for several days, then mixed a small portion in the feed, and he has now entirely recovered; and as I feel certain that the carbolic acid saved the life of my highly-prized poultry, I feel under obligations to hand the information over for the benefit of the public."—*Practical Farmer*.

The word d-e-b-t is composed of the initials of "dun every body twice." C-r-e-d-i-t is formed of the initial letters of "call regularly every day—I'll trust."

To Keep Fowls Healthy.

THE way I keep my fowls in health, I clean out the house once a week; put wood ashes under the roosts; have iron basins for them to drink from; whitewash inside hen-house with hot lime; put a little kerosene oil on the roosts once a month. The main food is oats, and cake of scraps to pick on. I never feed but once a day—at noon, or when I shut them up at 4 or 5, P. M. When they run out, then give them all they want. In my experience, there is no way to get diseased fowls easier than to keep them stuffed; it makes them lazy, and they won't work as they ought to, to keep them in a healthy condition. I never had any gapes in chickens. When any fowl begins to droop, I give three large pills of common hard, yellow soap; it is the best thing to cleanse a fowl I know of. I follow it for three days, give them nothing to eat and plenty of pure water to drink. In desperate cases, give half a teaspoonful of tincture of lobelia. It will seldom, if ever, fail of curing. It is a very cleansing and powerful medicine for fowls.—*Rural New Yorker.*

The Southern Farm and Home.

MACON, GA., AUGUST, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - - Editor

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VIEWS OF TALLULAH AND TOCCOA FALLS.—Mr. C. W. Motes, the celebrated photographic artist, of Athens, Ga., has recently presented to us a full set of his beautiful stereoscopic views of Tallulah and Toccoa, for which we offer him our thanks.

These pictures—fifteen or sixteen in number—embrace all the most striking points of the matchless scenery of our Georgia Falls, and they are executed with that perfect skill which characterizes all Mr. Motes' photographs. Sets of the views are for sale in Macon by J. W. Burke & Co., and Mr. Motes will fill any orders sent to him to Athens, Ga.

COL. J. B. BUCHANAN, of Cuthbert, Ga., has had the kindness to send us a few heads of a remarkably fine species of rye, called "Russian Rye," which he has raised this year on a small

scale with great success. The grain is nearly double the size of the ordinary rye, and the heads are longer and fuller than those of any other variety we have seen. We offer Colonel Buchanan our thanks for his remembrance of us.

WE acknowledge gratefully the receipt of several valuable public documents sent to us by the Hon. DAVID A. WELLS, Special Commissioner of Revenue, among them a copy of his report for 1869, which, in our judgment, is the ablest, clearest, and most statesmanlike view of the financial affairs of the United States that we have seen.

No public man in America who is now connected with the government has the same thorough mastery of the questions of finance and revenue, the same minute knowledge of details, the same intellectual grasp of the whole subject, as Mr. Wells. He does not allow his honest convictions of the truth, and of what is best for the welfare of the whole country, to be warped and twisted by considerations of partisan expediency or class interests, and though in no sense can he be said to sympathize with the South in the late war—quite the reverse—he warmly advocates the development of the industrial interests of the South now, the adoption of a fair and impartial financial policy, and the abatement or removal of those unjust and oppressive discriminations in favor of certain protected manufacturing interests at the North, which weigh so heavily upon the agricultural interests of our section.

Mr. Wells is a man of brains, boldness and culture, immeasurably above the tariff-tinkers and revenue-cobblers who now pass for financiers, and unfortunately control at present the financial policy of the United States.

Answers to Correspondents of Farm and Home

F. H., writing from Eatonton, Putnam county, asks whether it will pay to buy the Brahma, Poland, Dorking, and other eggs for hatching advertised by Northern poultry raisers, and transport them by express.

We answer unhesitatingly that it will not. Two years ago we bought three dozen Brahma eggs from N. P. Boyer & Co., Parkesburgh, Pa., and had them shipped by express. Out of the three dozen eggs placed at once under good hens; but two chickens were hatched, which were puny from the first, and died in a few days. We have heard several of our friends relate the same experience of the same experi-

ment. We do not doubt that the eggs were genuine and sound when packed, and believe that the jolting of the cars destroyed their vitality. At any rate, we found that to pay nine dollars, besides express charges, for thirty-six eggs to produce two sickly chickens, which lived a day or two, was not profitable poultry raising, and therefore advise our esteemed correspondent not to try the experiment.

E. R. ROBERTS, Gullettsville, inquiries "if it is good economy to mix stable manure and cotton seed for manuring." We do not think it is. Dr. E. M. Pendleton, of Sparta, in one of his experiments as to the relative value of *heated* or rotted and *green* fresh cotton seed, found that the former produced only 26 per cent, while the latter produced 117 per cent, thus proving that fresh seed are four and a half times as valuable as heated seed. Cotton seed mixed with manure in a heap will necessarily decompose rapidly and lose a large portion of their most valuable gases—losing, it is estimated, fully three-fourths of their value.

The best way to save these gases and preserve all the fertilizing properties of the seed, is to put them in the ground early and let the soil which they are intended to fertilize absorb all their gases.

They may be mixed with lime and land plaster, by which the germinating power of the seed will be destroyed, and all the ammonia fixed and confined.

G. T. J., of Harris county, is about to build a new gin house and screw, and wants to know which of the new patent cotton screws or presses and horse powers we recommend as the best. We state in reply that we have bought Bottoms' Horse Power from Findlay Sons, of Macon, for our own use, believing it to be an excellent machine. We hear various statements as to the relative merits of the Beasley and the Utley Cotton Presses, and have not made up our mind which to purchase for ourselves and to recommend to others. The Bottoms Horse Power we think is far superior to the lever powers and to the old running gear, taking up but little space, simple in construction, and of lighter draught than any other power we know.

TO ADVERTISERS.—We beg leave to request persons who favor us with advertisements for the FARM AND HOME to send them so that they will reach us on or before the 15th of every month.

Literary Department.

EDITOR'S BOOK TABLE.

Of the "new publications" which have accumulated on our table during the month, *Queen Hortense, an Historical Novel*, by Louisa Muhlbach, (D. Appleton & Co.,) is the first to claim attention. Like everything which Mrs. Muhlbach has written, it is entertaining and eminently readable. The life of Hortense Beaucharnais, daughter of the Empress Josephine, the unloved and unloving wife of Louis Bonaparte, King of Holland, and mother of Napoleon III., the present Emperor of the French, would if written with scrupulous fidelity to the truth of history, possess all the attractions of the most sensational novel. The outline and most of the details of Mrs. Muhlbach's book are historically true, and where she draws upon her imagination to make the picture more attractive or more striking, she does so with so much adroitness, and in such perfect harmony with the rest of the drawing, as to render it difficult for the reader to separate the facts from the fiction.

It would be next to impossible to add to the romance of the period embraced in the life of the unhappy Hortense—her brilliant entrance into life, her unfortunate attachment to Duroc, her still more unfortunate marriage to King Louis, her banishment and her death, "weary at last of misfortune and of the exile in which she languished."

Miss Muhlbach's book unfolds a graphic and delicately executed panorama of the remarkable historical epoch embraced between the rise of Napoleon the Great and the death of Hortense in 1837. The chapters relating to the early life of Louis Napoleon, the Revolution of 1830, the Revolution in Rome, and the sons of Hortense, and the death of her son Prince Napoleon, are exceedingly interesting, and afford a pleasing view of the better nature, the purer aspirations and nobler life of the ill-fated daughter of an ill-fated mother.

Beneath the Wheels, by the author of "Olive Varcoe," (Harper & Brothers,) resembles in style and construction one of Wilkie Collins' works. Without much merit as a mere story, it interests the reader from beginning to end, and while none of the characters in themselves rise much above the level of the mediocre, the plot is ingeniously constructed, and the action

is animated and well sustained, leaving the impression, when you reach the end, that you have read a novel superior to the common run of modern works of fiction.

Home Scenes and Woman's Friendship, by Grace Aguilar, (D. Appleton & Co.,) are two volumes of a very acceptable and attractive edition of Miss Aguilar's works, which are now issuing from the Appletons' press. Both books bear the marked impress of the refined nature, kindly disposition, and pure imagination of the gifted author. "Home Scenes," consisting of a number of short stories contributed at various times to different publications, relating to subjects of historical, domestic and moral interest, is a charming little book. We cordially recommend both volumes as pure in conception, able in execution, sound in their morality, and healthful in their purpose.

Put Yourself in His Place, by Chas. Reade, which appeared as a serial in the *Galaxy*, is now published in book form by Sheldon & Co. and Harper & Brothers.

Since the death of Charles Dickens, we suppose that the foremost place among the living English writers of fiction must be accorded of right to Charles Reade. There may be more of elegant romance and rhetorical beauty in the writings of Lord Lytton; more ingenuity and elaborate workmanship in the plots of Wilkie Collins; more gloomy power and austere sentiment in the works of George Eliot, and more magnificence of description and of the splendor of high life among "lords and dukes and noble princes," in the writings of Disraeli; but, notwithstanding his often insufferable vanity and self-love, his frequent extravagance, and the undue importance he gives to matters of no importance, it must, we think, be conceded that Charles Reade's works are the most powerful, most interesting, and the *best* novels of the day. We say the *best*, not only because in his skilful construction of the plot, in the fertility of his invention, the terse simplicity of his diction, his keen appreciation of what is most striking and emotionally attractive in the portraiture of character or the relation of incidents, he is not surpassed by any of the most famous of his contemporaries, but because in sound morality of purpose, in love of truth and justice, in execration of fraud, falsehood and pretence, in desire to promote the best interests of mankind, no modern novelist can compare with him.

Put Yourself in His Place is written to expose the tyranny exercised by the Trades Unions in England, and the terrible outrages which they

commit in the maintenance of what they call their rights. The picture, fearful though it is, is true to life. It is not long since the news papers gave detailed accounts of the violent treatment of a manufacturer in Lancashire by his hands in revenge for some imaginary invasion of their privileges, and to such an extent was it carried that he was compelled to change his residence almost every day, and was unable to induce any one to run the risk of driving his carriage.

It is this healthy purpose and vigorous performance of a noble task for the benefit of humanity, which invests this book with more than ordinary interest, and give it a value superior to that of his former novels, though some of these possess perhaps higher merit as mere works of fiction. *Put Yourself in His Place* has all the author's most glaring defects of style, manner and expression, but it has also all his most marked excellencies. It displays his weakness and his power, and our regret for the one is generally removed by our sincere admiration for the other.

We have not space to give even an outline sketch of the plot, much less to transcribe any of the passages which we deem the most striking. We regret this the less because we feel assured that no book of its kind will be more generally read, and therefore our readers can judge for themselves.

The Caged Lion, by Charlotte M. Yonge, author of the "Chaplet of Pearls," "Heir Redclyffe," etc., (D. Appleton & Co.,) is a "historical novel," descriptive of the captivity of James I, of Scotland, in France, during the reign of Henry V.

It is a very amusing and well-written book, but we think its being styled historical is an unfortunate misnomer. At the most, there is a thread of historical truth interwoven with a web of romance. The fabric, however, is very pleasing, tastefully woven, and highly finished.

The interest which has been excited by Mr. Disraeli's last novel, *Lothair*, has induced D. Appletons to publish a cheap edition of his earlier works, of which "Henrietta Temple," "Venetia," and "Contarini Fleming" have already appeared; to be followed by "The Young Duke," "Vivian Grey" and "Alroy."

Those who have already read them can refresh their memory with pleasurable interest, and those who have never read these masterpieces of English fiction, have now an opportunity of enjoying an intellectual treat of rare excellence.

Lippincott's Magazine for July, commencing

a new volume, contains : Petticoat Influence on the Government of England, by Justin McCarthy. The Winds, a Poem, by Cecil Dare. Two Letters, a Tale, by Mrs. W. A. Thompson. On the Theory of Evolution, Part I., by Professor Edw. D. Cope. A Week among the Mormons, by Miss Annie Morris. Shall we Despair of the Republic? by Rev. Walter Mitchell. A Ghost as a Modern Convenience, by Mrs. Margaret Hosmer. Lake Superior and the Sault Sainte Marie, by Isaac Aiken. Epigram, by Robert M. Walsh. The Loss of the Oneida, by Henry H. Goodrich. Sir Harry Hotspur of Humblethwaite, a Novel, Part III, by Anthony Trollope. Negro Superstitions, by Thaddeus Norris. Fairmount Park, by Malcom Macenen. Miss Tigg's Secret, by J. W. Watson. Russia in Central Asia, by Chas. Morris. Our Monthly Gossip. Literature of the Day.

As a special Premium, the back numbers of *Lippincott's Magazine*, containing the opening chapters of Anthony Trollope's new story, "Sir Harry Hotspur of Humblethwaite," now appearing as a serial, will be furnished gratuitously to any one subscribing to the Magazine before the first of August.

Harper's Magazine for July is a very good number, full of interesting and instructive matter and capably illustrated. The following are the contents : The Vaudois. The Ocean Steamer. Through the Wheat. Frederick the Great, VIII—The Conquest of Silesia Achieved. Me and my Son. About Walking Sticks and Fans. Jane Austen. A Dream of Fairies. The Old Love Again, by Annie Thomas. The Running Turf in America, Second Paper. Professor Heron's Mistake. Recollections of William Makepeace Thackeray. Did she Dream it? Anteros, by the author of "Guy Livingstone," etc. ; Flirtation with the Modern Conveniences. The Happy Valley. A Flower Piece. Rupert's Land and its People, by Randolph B. Marcy, U. S. A. ; James Fenimore Cooper ; Editor's Easy Chair. Editor's Literary Record. Editor's Scientific Record. Editor's Historical Record. Editor's Drawer.

We have received and read with interest the July number of the *American Agriculturist*, by Orange Judd & Co., New York ; the *Southern Cultivator*, published by W. & L. Jones, Athens, Ga. ; the *Rural Carolinian*, by Walker & Cogswell, Charleston, S. C. ; the *Southern Planter and Farmer*, by C. B. Williams, Richmond, Va. ; the *Journal of the Farm*, published in Philadelphia and Chicago ; and the *New England Farmer*, Boston, Mass.

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The *Plantation*, published at Atlanta ; the *Southland*, by D. Redmond, New Orleans, La., and the *Cultivator and Country Gentleman*, published by Luther Tucker, Albany, New York, reach us weekly, or as nearly so as reconstructed postal arrangements will allow. We value them highly as among the best edited and most valuable agricultural periodicals on our exchange list.

THE ECHOES.—We take great pleasure in placing on our list of exchanges a very charming little paper of eight pages called *The Echoes*, published under the direction of the Lee Academy of Memphis, Tennessee, and ably and gracefully edited by the young ladies of that institution. Both the original and selected matter in its pages display taste, refinement, and literary culture. It does great credit to the Academy and its gifted pupils.

WE have seen, in the hands of a friend, to whom it was sent by the editor, a copy of the first number of a new paper, *The Children's Argus*, published at Easton, Pennsylvania, by Mrs. REBEKAH SHUNK, the gifted daughter of the Hon. J. S. Black, and wife of the editor of the *Easton Weekly Argus*. We can commend the *Children's Argus* to public support, from what we have seen of the contents of the first number, and from what we know of the culture, refinement, and disposition of the amiable lady who controls its columns. Mr. Shunk's paper, the *Easton Weekly Argus*, is democratic to the backbone, opposed to all the *isms*, including all phases of that pestilential *ism*, radicalism. It is ably edited, and will, we trust, receive the large share of popular favor which it deserves.

WE are indebted to Mr. ROBT. W. SCOTT, of Frankfort, Kentucky, for a neatly executed pamphlet, containing the pedigrees, descriptions, etc., of Short-horn Durham Cattle, Improved Kentucky Sheep, Cashmere or Angora Goats, and Woburn, Irish, Grazier, White Bedford and Yorkshire hogs, which have been bred by him, and are now for sale at his celebrated stock farm, Locust Hill, near Frankfort.

THE BARTOW COUNTY AGRICULTURAL ASSOCIATION have placed us under obligations by sending us a copy of the Premium List and Rules and Regulations of the Society for the fair to be held at Cartersville on the 4th to 8th of October next.

THE Commissioner of Agriculture has our thanks for a copy of his report for the months of May and June.

For the Southern Farm and Home.
PRIZE POEM.

BY FRANK A. NISBET.

King Cotton.

The snow-white diadem that binds thy head
 A lineal look imparts, but then a trace
 Of Ceres' olive-brown and mantling red—
 A golden sheaf with grapes—might give thy face
 The charm that comes of wine and bread.
 All climes, except thine own, thy girls explore
 For fabrics dear or cheap, from silks most fair
 That sweep the street, to brooms that dust the
 floor,

While useful wares that have an home-bred air,
 The lovely, pretty dears ignore.
 The boys perhaps are loyal, but all untrain'd
 To prop the waning fortunes of thy crown;
 They love thy rural scenes, but that is feign'd
 By scores, who leave the farm for some poor
 town

And think it Paradise regain'd.

No ships of thine have o'er thy waters led
 Fair Commerce as a bride; in thy domain
 No arts entwine with wreaths a subject's head;
 No furnace flames light up thy mountain chain,
 Where ores crop out from many a bed.

The streams, on which the eagles rear their brood,
 Their wild estate of cliffs and woods bemoan,
 Still pour, unchecked by dam, a wasted flood
 Down granite slopes; their treasures all un-
 known,

Or waiting still thy Princely mood.

When in our crop the rav'nous worms appear—
 Since naught of skill avails their march to stay—
 We eye the stricken fields, but shed no tear,
 Though labor's fruits have vanish'd in a day,
 And Winter with its cares be near.

As the soil's left with virtues unimpaired,
 As shines the sun for all, and falls the rain,
 We may rebuild on what the vermin spared;
 We may by toil renewed our stores regain,
 And fare once more as once we fared.

But when Lord Paramount, with foolish greed,
 Exports in whole, the product of his land;
 When he persists all other soils to feed,
 But to his own gives back with empty hand,
 His children then may weep indeed.

Thou spendthrift lord! yon hills, now crowned
 with sedge,

Where cat or fox for long hath made her bed,
 Demand of honest men an earnest pledge
 That they with clover crops be duly fed,
 And fence'd with rose or bodark* hedge.

* * * * *

But whose the brave task to shovel the ore,
 To roll into bars, and fashion the loom?
 Who sink the shaft, and with lantern explore

* Osage, or Bois d'Arc.

The wondrous cave, to the fire-damp room,
 Where diamonds enamel the floor?

Who build the engine, and harness the steam
 To cars that go down on rails to the sea?
 Who launch the ships from their docks on the
 stream,

For Orient marts, where the profits may be
 Beyond what the wildest may dream?

Can culture and taste, with progress and power
 Await the slow steps of Africa's poor son?
 When comes, as it must, the perilous hour,
 Can altars be saved or glory be won
 By leaning on him as a tower?

Ye sons of the South! the aids that we claim
 Are hands that are strong, with hearts that
 brave—

Men who can labor, yet aspire to fame,
 Procure all of wealth that citizens crave,
 Yet toll for a citizen's name.

While climate and soil and waters invite
 To you, in its strait, the country appeals;
 To all who with mind a purpose unite,
 She offers, in fee, her limitless fields—
 But claims that her tenants be white.

[We take pleasure in presenting to our readers the following tale of rural life, by FRANK NISBET, of Osawatchie, Alabama, to which the Committee awarded the prize of Fifty Dollars offered by the Publishers of the FARM AND HOME.]

For the Southern Farm and Home.

**THE WRONG PHIAL,
 AND ITS CONSEQUENCES**

IN one of the central counties of Alabama the fifth day of December, 1866, a family consisting of father, mother and daughter, gathered about the hearth of the sitting-room the first reading the daily papers, the secondplying her needle, whilst the third was busily engaged cleaning, refilling and lighting the lamps. Just as the old gentleman had become deeply immersed in the news, a negro man entered the room and proached and said:

"Marster, man at de gate want to see y."

"White man or negro?"

"He's white man."

"Riding or walking?"

"He's walking, b'leve."

"Tell him to come in."

"Some adventurer," remarked the old gentleman, "and like enough he's some Yankee, who wants to stay all night."

"Possibly," replied the daughter, "but I think mother, he may be one of our own people."

if so, it will not do to turn him off at this late hour."

Before mother and daughter had time to settle the question of nationality, a tall, well-proportioned young man, weighing about one hundred and sixty-five pounds, made his appearance at the door. His face was well covered with whiskers and mustache, and he had just enough of the military air to give dignity to his person without adding the slightest hauteur to his fine open countenance.

Young Man—"Will you be good enough to allow me to stay all night?"

Old Gentleman—"Where are you from, and whither going?"

Y. M.—"I am just now from town, but cannot say precisely where I'm going."

O. G.—"Don't know where you're going! And, pray sir, where do you live?"

Y. M.—"To be candid with you, I am hunting employment, and would be pleased to find it in this part of Alabama."

O. G.—"And what is your vocation, young man?"

Y. M.—"I have never been engaged in any particular business, but was brought up on a farm, and after Lee's surrender, worked one year in the Valley of the Shenandoah."

O. G.—"Were you in our army?"

Y. M.—"All the while."

O. G.—"Yes, you can stay all night. Daughter, hurry up supper; I expect the young man is hungry."

Tea was soon announced, and the guest verified the old man's conjecture by attacking with much relish the coffee, broiled ham and buttered rolls.

Supper over, the party reassembled in the sitting-room, where they had much conversation, during which the stranger, with apparent candor, let the family know that he had adhered to the lost cause from the battle of Manassas to the fatal day when Sherman, having uncovered Lee's rear by marching into North Carolina, compelled that able leader to furl his banners. During the conversation, the old lady, whose suspicions had been first awakened by the announcement of a man at the gate who carried his own wallet, continued to ply the young man with questions, and fancied she saw him trip more than once in his answers; whilst the daughter would occasionally give her mother's dress a twitch to intimate that, in her opinion, the interrogative form of conversation was being pushed to the point of impoliteness.

About 9 o'clock the stranger, at the sugges-

tion of his host, retired, to think over the bloody rencounters of the war in which he had participated, or dream, perhaps, of the still more serious battle of life in which he was about to engage single-handed with the world. For an hour longer the family sat up, the old gentleman to finish his papers, the two others their discussion about Yankee adventurers.

"Well, daughter," said the mother, "didn't you observe that he had the assurance of a Carpet-Bagger, but when I pressed him to tell me where he was born and raised, he looked confused and minced his words?"

To this the girl, whose heart, like Desdemona's, had been touched by the soldier's simple recital of his adventures, replied:

"Mother, I'm sure the young man behaved well in the main, what you call assurance being only a becoming, manly self-possession; and as to his cowering under your searching inquiries, that was only so much embarrassment as might be natural to one in his peculiar situation."

"Yes," retorted the old lady, "and I should not be at all surprised if he left in the morning before day to avoid the embarrassment of asking your father the amount of his bill."

The girl was about to appeal to her father's judgment, when he anticipated her by saying in his quiet way:

"Daughter, it is bed-time, but before you retire get up all the silver, and put it under lock and key, otherwise your mother will pass a sleepless night."

Doctor John Ardis, into whose hospitable mansion we have introduced the reader, came from Georgia at an early period of the settlement of Alabama, and located in the county of D—, about fifteen miles below the town of S—, on the main road leading down the river in the direction of Mobile. His house stood on an elevated plateau, (from which fact his residence was called the Plateau,) on the east side of the road, in a grove of native oaks, and commanded from the rear a view of the Alabama river, and the intervening plantation of two thousand acres. This plantation (and it was one of the best on the river,) was all, or nearly all, that was left the Doctor at the close of the war, but that was left unencumbered.

Out of several children born to him, Julia, (with whom the reader is partially acquainted,) was the only one left, the others, a boy and girl, having died in early childhood. Of his daughter the Doctor was justly proud; for she was in his eyes the model of every female excellence. By a less partial judge, like ourselves, she

would be called, not beautiful, but fine-looking; she would be said to be blessed, not with genius, but with two qualifications—one of the heart, the other of the head—that more than compensated for the lack of brilliancy; she was endowed with an amiability that was proof against everything but premeditated injury, and with that natural good sense, which, when combined with address, passed for wit of the most charming sort. She was industrious, but disliked sewing and knitting, the needles, as she expressed it, disarming her of purpose, as the rod and points take the electricity out of the cloud. She rode gracefully on horseback, delighted in the exercise, and often indulged herself in long rides with her father. Miss Julia played equally well on Singer and Chickering, would not permit a servant to touch the lamps, nor beat and salt the butter, and when engaged in this part of her daily business, with her sleeves rolled up to the elbow, and her face slightly flushed by the exercise, was no bad subject for the highest effort of the photographic art. Julia was a blonde, with hair not precisely blonde, but on that order. She was plump but not fleshy, and weighed (we like to tell a girl's weight when she has any to brag of,) just one hundred and thirty-five pounds. A fine mouth is rare, and will monopolise the eye of an interlocutor, however good the other features may be. Reader, have you a fine mouth, from which you are accustomed to drop words, witty and kindly? If so, you have a treasure beyond measure, more attractive than the United States mint, that drops its golden eagles. Julia's mouth would not engross your whole attention, and when you gazed into the liquid blue depths of her eyes, you would feel something akin to fear—an apprehension of falling in and being drowned.

The next morning the stranger made his appearance at the breakfast table, with his natural good looks so much improved by sleep, water, and a change of linen, that Mrs. Ardis didn't think it necessary to count over her silver; whilst Julia's face had a look just a little expressive of triumph over her mother's inferior discernment of character. After breakfast the young man expressed his thanks to his host for the night's entertainment, and was in the act of opening a small well-worn pocket book when he was interrupted by Dr. A.:

"Young man," said he, "I've entertained you at my house, and think I have a right to your name."

"My name is Hartwell—Julian Hartwell," was the prompt reply.

"You said you were in search of employment; what can you do?"

"I can do anything, sir, any other young man can do."

"Well, Mr. Hartwell, I've a fine plantation, and there is no scarcity of labor, such as it is, but I'm getting old, and have been so worried this year by a worthless overseer and the infernal negroes, that I've a mind to make you a proposition, but there is one thing that makes me hesitate."

"What is that, Dr. Ardis?"

"You are from Virginia, and I fear you will be very awkward at making our main staple."

"I presume you will be at home most of the time, Dr. Ardis?"

"Yes, all the while; I seldom go from home."

"Then there can be no difficulty in making cotton, for you know all about it, and I can follow your instructions implicitly."

"Very well, sir, it is now the 6th of December, and as my overseer leaves on the 16th, I would be glad to have you take charge of my plantation at once, and we will share the profits of the next year's crop on the terms customary in our neighborhood—you putting in your personal services against my capital."

Hartwell and the Doctor having spent most of the day in talking over their contract, arranging the details and exchanging the necessary papers, the short December day was far gone by the time they got through, when the Doctor ordered his horse and rode down into the plantation. After his departure, Hartwell sat gazing into the fire as if he were reading his future in the flicker of the oak coals, when his reverie was interrupted by the entrance of Miss Julia. With her hands on the lid of the piano, she turned her face to Hartwell, and said:

"It is my hour for practicing, Mr. Hartwell, will it bore you for me to go through with it?"

"By no means, Miss Ardis; nothing would please me better, for it has been long since I heard anything save fife and kettle drum."

"You were so long a soldier, I presume you like martial airs?"

"No, indeed; I would prefer almost any thing else."

"You do not like then to have your heart stirred?"

"My heart has been stirred in that way so often to so little purpose, as it turned out, that I would choose just now to have it lulled."

"Lulled! do you mean put to sleep?"

"No, I should have said soothed."

"It is in some pain, then?"

"In none whatever."

"But surely, Mr. Hartwell, you have some favorites, and if you will only mention one of them, I would be delighted to play it."

"I assure you I have none, but you have doubtless, and I would be glad to listen, if you will only abandon yourself to the inspiration of your own task."

Julia, with more of a jerk than she was aware of, threw up the lid, and played a number of pieces with much animation, some of them lively and others pensive.

"Mr. Hartwell," said she, again turning her face towards him, "do any of these soothe your heart?"

"It is all very fine, Miss Ardis, and I must do you the justice to say you execute with no little skill."

Julia, having put down the lid of the piano, passed out of the room, saying to herself as she left: "Mr. Hartwell surely must think a lady's music lies entirely in her fingers."

That night when the young man retired, his thoughts were unusually checquered and melancholy. I cannot, thought he, feel otherwise than pleased and grateful at Dr. Ardis' flattering proposition, which holds out fine prospects in a monetary point of view, but then my reception by at least one member of the family has been the reverse of flattering. Mrs. Ardis evidently regards me as a Carpet-Bagger, or some Southern adventurer of no high order in the social scale. And in some respects she has good grounds for her suspicions, for I am an entire stranger, and can give no references of family or character. This would be a trifle to be laughed at, but for Julia. She *has stirred* my heart to its profoundest depths, and I have some grounds to hope that I have inspired her with respect for my character. This evening she was so affable and agreeable, I fancied she would have induced me to throw off my reserve, as she had thrown off hers from the beginning, and be on terms of social equality with her. But it will never do. The truth is, her mother is not far wrong. What right have I to claim the companionship, much less the affections of a girl who can command the best offer in this county or in town? I see now that I was too hasty in accepting the Doctor's proposition, for it has already surrounded me with the first threads of a web that may be woven by time into the most disagreeable complications.

Thus Hartwell pondered over his situation, and the future, in truth, was not without a cloud

of doubt and hazard, which, as he fell asleep, he dreamed had broken, only to reveal between the rifts the sweet countenance of the girl, who, he felt assured, was destined to exercise a great influence, for good or ill, on his future life.

The next morning, by agreement with Dr. Ardis, Hartwell was to take his leave, to return in eight or ten days.

Soon after breakfast, therefore, he bade the Dr. and Mrs. Ardis farewell in the sitting-room, and as he was going out, met Julia in the passage, whom he was about to pass with a bow and a formal good morning, but she stepped ahead of him, turned the bolt, and said, as she opened the door:

"So, Mr. Hartwell, like some Mediæval knight, you are off in search of new adventures?"

"You would have been nigher the mark, Miss Ardis," replied he, "if you had compared me to the Wandering Jew, for it seems to be my lot to be forever on the tramp. I am, however, under engagements to your father to return at some time or another, but—I am detaining you here in the cold, so will bid you good-bye."

In spite of the December clouds that threw their chilling shadows along his pathway, and the many doubts that cast a gloom of despondency over his heart, Hartwell, with that rebound of hope peculiar to youth, extracted sunshine from Julia's gracious manner of leave-taking, and appropriated to himself, as he went off, the pretty stanza of Shenstone:

"She gazed as I slowly withdrew,
My path I could hardly discern,
So sweetly she bade me adieu,
I thought that she bade me return."

He did return on the appointed day reluctantly, to fulfil what he now considered an ill-advised engagement with Dr. Ardis. Hartwell, however, was not a man to take hold of a new enterprise with a faint heart or a nerveless hand. Once initiated, he devoted his whole time to, and brought all his resources to bear on the task he had undertaken. What remained of the old year he employed in getting rid of the business that properly belonged to it, and did so with so much spirit that when the new year came he had to appropriate no part of it to the dead past. He impressed the negroes favorably from the start by his calmness, his few but resolute words, and his ubiquity. They could tell him of no untoward mischief that startled, of no obstacles that appalled him. He made them know, not by words only, but by calmness combined with energy, by his self-possession

and his resources, that he was competent to all emergencies. If a farm implement was out of place he could tell them where it was and who misplaced it. Without seeming to take much trouble to inform himself, he was aware of all that was done against law and order, but knew when to take cognizance of an offence and when to be blind. And, whether grappling with difficulties of business as they emerged, or dealing with offenders, or inspiring the lazy with something of his own energy, his tongue never lost its bridle, nor his face its expression of kindness and resolution.

On a certain occasion, having ascertained from some of the most influential negroes what amount of produce had been made on the plantation for several years, he said to them :

"Well, boys, we'll beat that this year, and you'll all acknowledge at Christmas that you never before did a year's work with so much satisfaction to yourselves."

A few days afterwards he overheard some of them in conversation, when he *didn't hear* one of them say :

"What sorter satisfaction you call dat. He say he gwine beat dat crop what we make here las year, and how he gwine do it, 'cep'n he gwine put in too much land, and git in de grass too, and den work us like we was mules. White man must tink black folks made out'n ion."

On the 15th of April, Dr. Ardis, at Hartwell's special request, rode over the plantation with him for the first time. The ditches and drains had been cleaned out, the fences put in good repair, the soil thoroughly prepared, and the corn and cotton put to a stand by the most pains-taking culture. After riding, examining, and pondering the situation, Dr. Ardis exclaimed :

"By the immortal, Hartwell, you've done wonders here! You seem to control the negroes with more ease than you do your mules. How do you manage to get so much work out of the lazy vagabonds?"

"Well, Doctor," replied Hartwell, "if you see anything particularly commendable in my management, it is all owing to my having served for near five years in the army of Virginia."

"How so; did you cultivate crops in the army?"

"No, sir, I learned much of human nature in the service; but what was better than that, I was made to know the value of obedience—obedience to my superiors."

"And how, pray, does that enable you to

manage a plantation, which, in my opinion, is so different from a camp?"

"There is not the wide difference you imagine, Doctor; the principles are the same, and the qualifications necessary in the one are indispensable in the other. A few of our men understood the necessity of implicit obedience to orders, and the immense advantages that result from system and rigid discipline, but the large majority could not or would not bear the necessary restraints. The officers were good and the material splendid, but a want of discipline ruined us."

"Jim Fearless, who was my overseer the last year, carried a revolver in each pocket, and had more than one row with these rascals during the year; do you go armed?"

"No, sir, I think it unnecessary. The negro is imitative, and his first outlay of money, therefore, after he was set free, was for pistols and guns. If the whites would drop the habit, the blacks would again imitate them and cease to expend their hardly earned money for such a barbarous appendage to the person as a revolver. Besides, I shouldn't care to live another day if a loaded revolver, habitually carried, were my only lien upon life."

Here the two gentlemen came to a squad of laborers, to one of whom Dr. Ardis said :

"Well, Dick, how do you get on?"

"Your servant, marster."

"Dick, it looks as if you were making a fine start for a good crop."

"Yes, sir; we's tryin' to do som'nnother in dat way. Marster, is you got anything like some barker 'bout you?"

"Yes, Dick, here's three fingers of the best Virginia plug that'll sweeten every tooth in your head for the next two days."

"Ha! ha! ha! tank you, marster."

After every part of the plantation had been examined, the two gentlemen rode back to the Plateau, the Doctor thoughtful and taciturn, whilst Hartwell tried in vain to engage him in conversation. Having arrived at the house, Hartwell walked round into the back yard to get a drink of cool water at the well. He here saw Miss Julia going to the dairy with the whole yard of poultry, consisting of turkeys, chickens, and ducks, in earnest pursuit of her. Picking up a stick and rushing in among the noisy gobblers, he feigned alarm for the young lady, and pretended to be knocking them down right and left, when she exclaimed, with an apprehension real or better feigned than his own :

"Mr. Hartwell! what in the world are you doing? Are you killing my pets?"

"Your pets? I really thought the things were about to devour you alive, and it occurred to me to relieve you by making a flank attack."

"You are very considerate, to-be-sure, but if I had been pursued by as many wolves, would you have been so ready to interpose your precious person between me and danger?"

Instead of answering, Hartwell said, with some embarrassment:

"But tell me, why does the whole poultry yard follow you in this way?"

"I feed them two or three times a day," replied Miss Julia; "but they are never satisfied, and the moment I appear in the back yard they recognize and gather about me as if they were half famished. I almost repent having undertaken them."

"Why so, Miss Ardis; do you dislike the employment?"

"No," replied Julia, "I'm very fond of it, but have become so attached to my pets it would grieve me to have them killed. See, Mr. Hartwell, there are as many as two dozen chickens large enough to eat, but I'm sure no one but a *very particular friend* could induce me to murder them. Are you fond of such food?"

"You're right, Miss Ardis, I wouldn't have them killed if I were in your place," replied Hartwell, as he turned to go up stairs to his room.

"How stupid," thought Julia, "it is the second time I have given him a fair opportunity to pay me a compliment, and his conduct is incomprehensible except upon the supposition that he is exceedingly dull of comprehension."

Hartwell having reached his room, threw himself on his bed in a paroxysm of conflicting emotions.

"What a trying situation is this of mine," he murmured. "I could scarcely avoid throwing myself at the dear girl's feet in the open yard, and telling her how much I loved her. This is indeed unbearable. I will act like a man, have an interview with her father, tell him frankly of my devotion to his daughter, and ask his permission to address her. It will be better to be refused by the Doctor and denounced as a designing adventurer by Mrs. Ardis, than to live on in this way."

That evening, after his return from the river, it occurred to Hartwell that he would have an interview with Dr. Ardis on business, and manage to make his request at the close of it.

"Dr. Ardis," said Hartwell, as they sat to-

gether in the front piazza, "the negroes are getting sick and must have a physician. I presume you will attend to them."

"No, sir," replied the Doctor, "I shall do no such thing. I have done my share of practice in my day, and shall do no more of it for white or black, unless some special friend need my services. Besides, my prejudices of race are very strong. When I am thrown in contact with the individual negro my feelings for him are kindly, but I have long thought that *our* salvation as a people depends upon their segregation, as suggested by Mr. Jefferson. If I could follow the bent of my convictions I should emigrate the whole of them to New Mexico, there to work out their salvation, or be gradually absorbed by the Mexicans, in whose estimation the red of the purest Castilian, the dusk of the Indian, and the jet black of the African blend and form the nicest national bouquet. No, sir, you must get Dr. Randolph to contract with them by the year. His experience, by reason of his youth, is limited, but he is competent for all summer diseases; and if he encounters any of those winter complaints that prove so disastrous to the blacks, he shall have the benefit of my counsel."

"Where does Dr. Randolph live?" inquired Hartwell.

"He resides but three or four miles below," replied Dr. Ardis. "He and his sister are to be here to spend the night with us; they are friends of ours, and I hope you will go in when they arrive and make their acquaintance. By the way, Hartwell, Kate Randolph is a fine girl, and well worthy of your best endeavors at pleasing."

"Doctor, my disposition to please is pre-engaged, and a part of my object in having this interview was to solicit your permission to address your daughter."

"Who, Julia?"

"Yes, your daughter."

"And you would not do so if I were to refuse?"

"No, Doctor, it should end with your refusal, I assure you."

"That is very commendable. I am, as you may have observed, a candid sort of person, and will say to you in the spirit of my chief characteristic, that I know absolutely nothing of my daughter's disposition towards you, and that you are at liberty to find out for yourself; but her mother, I think, is much prejudiced against you, and the girl is much flattered by the attention of others from town and country. I

have too much confidence in Julia's principles and discernment to fear that she would ever select for her husband a dilletanti sap-head, or an ingenious knave, and from the rest of her suitors she is at liberty to accept any offer that may please her. I shall, therefore, neither prejudice your suit by my counsels, nor aid you by letting her know of this interview."

[Concluded in our Next.]

A recent issue of the *Lexington Home Journal* contains the following lines from the pen of Mr. A. Fulkerson, upon the inventive and indefatigable Mr. Brinly, the famous plow manufacturer:

A health to Tom Brinly, of plow-making fame;
He has won for himself and his children a name
That's spoken with honor in many a land,
By the rich and the poor, and the noble and grand.

A health to Tom Brinly, of brave honest heart;
He has acted the man, he has done well his part—
He sprang from the hard-handed yeomen of toll,
And his genius develops the wealth of our soil.

A health to Tom Brinly, his furrows are deep!
And they throw up soil where the farmers shall reap;
For his plows are as true as the anvil that stands
Where he fashions them out with his own honest hands.

A health to Tom Brinly, wherever he goes!
Good luck to his friends, and bad luck to his foes!
May the smiles of prosperity brighten his way,
And the love which he values ne'er know of decay.

A health to Tom Brinly, of humor and fun!
When his last round is plowed and life's furrow done,
May the trumpet of God, with its music of love,
Call an honest man home, to the mansions above!

Europe contains 70,718 miles of railway, composed of 150,000,000 cwt. of iron rails, on which 400,000 passenger carriages and 600,000 baggage cars are dragged by 18,000 locomotives, over 52,000 bridges and through 84 miles of tunnels, at the rate of \$60,000,000 per annum with a consumption of 4,000,000 tons of coal.

Lands are made to increase yearly in fertility, mainly in three ways—by buying commercial fertilizers, by plowing under clover, by buying rich food for animals, and saving all their droppings. That farmer understands his business who knows which mode is best for him. The most successful farmers practice all three.

The following advertisement appears in a Canada paper:

"All dose people what I ose,
I'll not ax 'em for pay,
But all dose people what ose me,
Must pay me immediate."

AWFUL.—A New York paper describes the bonnets that are coming with the spring as "awful—something like a sunflower on the peak of a haystack."

Books, Pictures and Organs Given Away.

As a reward to those who take the trouble to get up clubs of subscribers to the *FARM AND HOME* in their neighborhoods, and as an encouragement to others to engage in the enterprise, the Publishers have agreed to offer the following liberal premiums:

OUR PREMIUM LIST.

To any person sending us Three Subscribers and Six Dollars, we will send any one of Bulwer's and Scott's or Dickens' Novels, or any other book in our Catalogue, worth \$1 50.

To any person sending Eight Subscribers and Sixteen Dollars, a highly finished Picture, (Chromo) worth \$7 00, or books to that amount selected from our Catalogue.

To any person sending Fifteen Subscribers and Thirty Dollars, one or more Chromos, worth \$15 00, or books to that amount.

To any person sending Thirty Subscribers and Sixty Dollars, Books of the value of \$35 00.

To any person sending Seventy-five Subscribers and One Hundred and Fifty Dollars, a Parlor Organ, or a Sewing Machine, worth \$60.

To any person sending One Hundred and Fifty Subscribers and Three Hundred Dollars, an Organ worth \$180, or a Library, selected from our Catalogue, worth \$150.

Our Catalogue includes all the best Standard Books, Agricultural, Historical, Miscellaneous and Juvenile, Bibles, Hymn and Prayer Books, in all styles of binding, Photograph Albums, etc., etc. This Catalogue will be sent, postage free, on application to the Publishers.

OUR ADVERTISING RATES are published in full below, for the information of our friends and patrons.

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All advertisements should be received here by the 15th of the month previous to that in which they are expected to appear, in order to insure their insertion.

Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are enough liberal.

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THE
SOUTHERN

FARM AND HOME



SEPTEMBER, 1870.

W. M. BROWNE, Editor.

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MACON,

GA.



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* * * THE POSTAGE on the FARM AND HOME is 3 cents a quarter ; 12 cents a year.

For Club Arrangements and Opinions of the Press—See Third Page of Cover.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., SEPTEMBER, 1870.

No. 11.



FARM WORK FOR THE MONTH.

COTTON picking is, or should be, the all-absorbing work of the planter during the month of September. Hoping that all readers of the *FARM AND HOME* have taken the advice given them in the August number; have had their gins, running gear, packing screws, etc., put in perfect order; have prepared their baskets and wallets, and have done all the jobbing necessary for the fall work in the interval between laying by and cotton picking, they can now apply themselves with all their force to saving their crop. If they begin now and "keep up" with the cotton as it opens, they can do the work well and neatly, but if they allow the cotton to get ahead of their force, the picking will be done in a hurry, and the result will be cotton filled with trash, hulls and dirt, which will certainly depreciate the value of the staple. It seems highly probable that when the market opens the "advantages" will be all "in favor of the buyer." The prospect of a heavy crop, the war in Europe, and the machinations of speculators, will combine to depress prices and make buyers much more fastidious and discriminating than when cotton is scarce and prices rule high. Those, therefore, who are careful in picking will be sure to have a decided advantage over those who are not, and the increase in price will far more than compensate for the labor. The first pickings should be well sunned, and if large quantities are stored in bulk, it is well to stir the heaps occasionally and expose them to the air, to prevent damage

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from heating. A slight heat or sweat, which will extract a portion of the oil from the seed and give a cream color to the lint, is desirable, but it is necessary to be very careful that this be not over-done.

Great care should be taken not to put up in bulk cotton picked in showery weather or early in the morning while the dew is on it, since, if this precaution be not taken, the heap will certainly heat and assume a dark mouldy color, which will largely depreciate the value of the lint.

RYE AND BARLEY.

This is the month to sow rye or barley for pasturage. Rye or barley sown about the middle of the month will be worth double that sown in October. Sow broadly of these admirable grains. You will thereby secure a fine healthy pasture for your stock during the winter, and until the beginning of March, and reap a rich yield of grain besides.

CORN.

Towards the end of the month corn should be gathered on all land intended to be sown in wheat, so that ample time may be given to prepare the soil to receive the seed in October.

PEAS

Should be gathered as fast as they ripen. In a year like this, when provisions are likely to rule high and money to rule low (in the pocket,) it is important to save all we can for food for man and beast. Save, therefore, we earnestly advise, all the peas that can be made, and after gathering the peas save all the vines for hay. It is excellent food for milch cows.

TURNIPS,

If not already sown, may still be sown and yield a good crop. If the seed sown in July and August has failed to bring a good stand, sow over again; and if you have found a good spot that

you overlooked or forgot in July, and have since prepared well, sow it in turnips by all means. You can hardly have too large a patch in this valuable crop. Depend on it that the more turnips you grow the less corn you will have to buy, and the fatter stock you will have.

We are not sufficiently informed to be able to state how much money has been sent out of Georgia this year to pay for corn and hay purchased and consumed by Georgia farmers, but we venture to assert that the sum would not be very far from twenty millions of dollars. If we could have kept this sum at home, we should not have so many crop-leins outstanding, and we should not be compelled to hurry our cotton to market and sell it at whatever price we can get. Let us therefore plant everything which will furnish good and abundant food for stock, save the corn, and enable us far as possible to use our corn for bread. In this way we may in some measure redeem the error of the past spring and save ourselves a part of the evil consequences of the "all cotton and no corn" mania.

HAY.

We have been blessed with such copious rains during the greater part of the summer, the crop of crab grass is unusually abundant. Let all be saved that can be gathered. As our fodder stacks will not be too numerous, it will be wise to "help out" with good hay.

CALIFORNIA AND SCARLET CLOVER

Should be sown towards the end of this month. About sixteen pounds of clean seed will be sufficient to seed an acre. We confidently recommend their cultivation as most valuable forage plants. The California clover affords an abundance of succulent food for stock in the early spring, and if not grazed too close will shed enough of seed to secure good crops for several years, although the ground has been used in the summer for the growth of other crops. For information as to the scarlet clover, see our July number.

For the Southern Farm and Home.

Improvement of our Worn-out Lands.

A SHORT time since we read a statement said to have been made by a soldier of Washington's army, that during the winter which the American forces spent at Valley Forge, he found that the whole neighboring country had been abandoned by its former owners because it had become unproductive, and that thousands upon thousands of acres situated between the Hudson

and Delaware rivers could then have been bought for less than a dollar an acre. These lands had been worn out by constant cropping, without any return in the shape of manure, until they were reduced to the same condition as that of thousands of acres of once fertile land in Georgia, which are now "too poor to sprout peas."

By systematic improvement, those same lands have been brought to a higher degree of fertility than that of any time since their first occupation, support their population of thrifty and prosperous thousands, and sell for more than a hundred dollars an acre.

How has this change from absolute barrenness to extreme fertility been wrought? By scientific husbandry, by the careful collection and application of every species of manure, by deep and close plowing, and above all, by the use of clover and plowing under green crops, creating vegetable matter and forming new mould. Throughout all these lands a well adapted rotation of crops and the clover plant have been the means employed to restore the worn out lands and make them support their teeming population, and furnish besides immense surplus crops of grain, grass, and meat; so that their owners are to-day the most thriving and prosperous farmers in the world.

We contend that if we in Georgia will only adopt the same intelligent system, we can obtain the same results, and that collect our farm-yard manure as carefully, use lime, gypsum, and other mineral manures, grow clover, and plow in peas and other green crops to add to the vegetable matter in the soil, the worn out lands of Georgia, whose red and seamed surface now tells of the murder which has been committed, may be made quite as productive and valuable as the old fields near Valley Forge. It is no longer possible to say that clover cannot be grown in Georgia. The contrary has been too abundantly demonstrated by the successful experiments of several planters. With the same careful preparation as is made by the New Jersey and Pennsylvania farmers, with the same deep plowing and liberal use of manure, clover can be as successfully raised in Georgia, and we need no other specific to redeem our "worn out lands."

But even those who may be still disposed to deny the profitable production of clover will admit that we can raise oats, peas, or barley, and any one of these crops plowed under while in a green state, or even allowed to mature, then

eaten down, trampled by hogs, and then turned under with a good two-horse plow, will supply a rich treasury of vegetable matter to the soil, and in course of time restore its pristine fertility, while it will also materially increase the productions of the smoke house. Clover, lime and plaster, and a judicious rotation of crops, are certainly the best restoratives for our wasted lands, but peas, oats, or other small grain which will shade the land, and in the shape of putrescent vegetable matter increase the mould, will prove a very efficient substitute, uniting pasturage with tillage, securing us an adequate supply of meat and good stock, arresting the deteriorating process of former days, repairing the waste of generations, and establishing a new and more prosperous order of things.

Unless we give back to the generous earth the elements of productiveness of which for years upon years we have been depriving her, she cannot respond to our demands. The system of husbandry which we have pursued for generations has been the worst with which any country has ever been cursed. One of the richest and most productive regions in the world as our ancestors found it, has within a century been reduced to barrenness. Ours the task to renew the exhausted soil, break down the sway of bad habits, abandon the errors of old usage, and introduce a better order of things. Science and skill have demonstrated the folly of the past and the wisdom of the improved system of husbandry by arguments more cogent than any which the most gifted orator or essayist could employ. If we will only persevere, the red hills will soon change their color and renew their youth, the hideous gullies which now disfigure the fair face of our country will be filled up and made smooth, and the "old fields" now tenanted by stunted pines and sedge grass will be glad again with the stately corn and waving wheat.

WARREN.

For the Southern Farm and Home.

Asparagus.

BY DAVID Z. EVANS, JR.

AS WE have had experience in Asparagus culture for market, I will endeavor to practically explain the method or methods of culture resorted to, to obtain the best results with the least outlay of time or money.

Asparagus, coming first on the list of vegetables in alphabetical order, also begins the season of vegetables bringing in a supply of the needful at a time in the spring when it is

really welcome, in time to meet the many wants and expenses which always occur in the beginning of the year, when almost all other crops have not yet been planted, or are just commencing to grow, and which require the whole season to perfect.

RAISING THE PLANTS

is not a very tedious or uncertain operation. To raise them, prepare a piece of rich soil of the desired size by spading, or by plowing and harrowing thoroughly; draw light one-horse furrows the length of the piece, three and a half feet apart; into this spread a limited quantity of fine manure or shovellings, and then throw a furrow on to it from each side, making a ridge. Now, with a stick or the bottom of a wooden rake, make a drill on the top of the ridge, first raking off all clods, and sow the seed thinly and as evenly as possible in the drill just made, but first soaking the seed over night to make it germinate freely and evenly; cover lightly with the back of a wooden rake or with the hand. Your sowing is now done, but when the plants make their appearance always keep free from weeds or grass, to insure good-sized plants or setts suitable for setting out the following fall or spring, for if you leave the plants and grass to run a race, it will generally take two years for the plants to grow sufficiently large to put out; and it is for this reason that many say two-year-old plants do the best, when in reality they do not. We have tried them both, and are abundantly satisfied with the one-year-old ones. Cultivate with a horse, and with hoes and fingers—the latter, time-honored institutions.

We generally sow our seed about the middle of March, and from that to the end of April, but of course the further south we go the earlier we plant or sow the seed. A very safe plan is to sow the seed in the spring, as soon as the soil is fit. By following this rule, no fear of failure need be entertained.

PREPARING THE SOIL AND SETTING THE PLANTS.

We have two plans of planting Asparagus, one of which is as follows: Plow, harrow, and thoroughly prepare a piece of ground of suitable size; let it be rather light, not heavy or stony, but of a texture commonly known as a sandy loam. Having properly prepared it, draw deep two-horse furrows three or three and a half feet apart the whole length of the piece; run the plow both ways in the same furrow, to deepen and partially clean it out, and then clean out the remainder with shovels or spades.

Take good, short stable manure and spread in the bottoms of the furrows just drawn to the depth of six or eight inches; tramp this down firmly with the feet, and then take the plants, (having just dug them up and wet their roots in their mud,) and plant them about eighteen inches apart, spreading their roots nicely and putting a small quantity of soil on them to keep them in their places, and to prevent them from drying, if left until they can be covered with the plow, the plow being the most expeditious mode of covering them. Any careful plowman with a one-horse plow can cover them almost as nicely as some of our amateur gardeners could with shovels, rakes, etc. They are often covered by running the plow on its furrow side, over the open furrow, so as to cover them without making any ridge, a ridge being very objectionable.

The other plan is, to prepare the land as described above, and when this is done, throw about three or four inches of good ground in the bottom of the furrows just cleaned out, and sow the seed in the soil just put in the furrows, but sow thinly and evenly, one row to each furrow, and keep clean and free from weeds. At the end of each year, in the fall or spring, throw in a few inches more of soil, and so continue until they are filled up, when it is cultivated in the same manner as that planted according to the first mentioned method.

A great many market gardeners have adopted the latter named plan, as they do not have to transplant, thereby saving much trouble and time. Not only this, they will produce better-sized shoots the first bearing year than that which has been transplanted. It thus combines two excellencies which, to my mind, make it the most desirable plan of the two.

CULTIVATING, GATHERING AND MARKETING.

The Asparagus bed should be burned off in the fall by spreading a good coat of straw or leaves thereon and firing it, so as to destroy the weed seeds, which will, no doubt, be deposited by the innumerable weeds which a yearly application of manure will almost invariably produce.

Give a heavy coat of stable manure yearly, in the spring, which should be warm and fine, and immediately plow it in with a one-horse plow. Afterwards level off the patch by harrowing thoroughly. An application of salt, about half a bushel yearly to each acre, is very beneficial when you do not enjoy the advantage of a saline atmosphere; but when on or near large bodies

of salt water, the application of salt is of no appreciable or decided benefit.

The first three years cultivate between the rows with a cultivator; after that, plowing and harrowing in the spring must suffice, until the following spring.

The first market year, which is generally the third year after setting out, after the shoots are about six or eight inches high, cut them off a short distance below the surface, and convey at once to where they are to be packed, which is done by filling a frame, holding from twenty-five to thirty shoots, putting a string around them while in the frame, and tie them at once. Bass matting makes the best tie, and is the article generally used by market gardeners. As soon as they are tied up, cut off the bottoms nicely and evenly, straight across; pack in well ventilated barrels or boxes, and ship at once. You can begin to cut as soon as they are fit and continue for several weeks, but do not cut too late in the season, but leave a quantity of shoots toward the close of the cutting season, to grow up and encourage the growth and mature development of the crown, and hence increase the productiveness and profitableness of future crops.

Of varieties, the best are "Connover's Colossal" and the common purple-top, both of which are reliable sorts for either home use or market purposes.

"*Cecil Fruit and Truck Farm,*" *Chesapeake City, Md., July 12th, 1870.*

COST OF MANUFACTURING COTTON YARNS.—It is stated, says the *New York Economist*, that the cost of manufacturing cotton yarn in the cotton States is five cents per pound less than at the North. There is no reason why cotton yarn and cloth cannot be much more cheaply produced in the South than at the North. Cotton, in its manufactured state, is a very bulky commodity, and a dangerous and risky article of transportation. It wastes immensely, also, as dirty or wet portions are unsaleable except as paper stock. The establishment of factories need not cost any more at the South than at the North. It is conceded by manufacturers that steam power, all things considered, is as cheap as natural water power, so the absence of water privileges need not militate against the erection of cotton factories. Labor can be obtained as plentifully and cheaply in the cotton-growing States as in the Northern or Eastern States, and Southern ports offer as ready facilities for the exportation of the manufactured goods. There is every encouragement for the establishment of the cotton manufacture in the South, and its inauguration in the Carolinas would be as beneficial to those States as it has already proved, even from its limited trial, to Virginia and Georgia.

For the Southern Farm and Home.

Agricultural Societies—Letter from John Plowhandles.

Mr. Editor : I am happy to see that my suggestion in my last letter, as to requiring a pledge from all candidates for seats in the Legislature to support a handsome annual endowment of the State Agricultural Society, has met with universal favor. Any number of ambitious men, who have been "approached by friends" to allow themselves to be named as candidates, have informed me of their entire readiness to support my policy, and have expressed some astonishment at the moderation of my demand, (\$50,000 or \$25,000.) But what pleases me still more is the concurrence in my views of large numbers of those who vote but do not want office, and who are determined not to vote for any man who will not pledge himself to a liberal appropriation for the encouragement of agriculture.

This is a great point gained. Rely on it that most of the members of my family will follow my advice, and I believe that I can state confidently without any arrogance that it is in the power of the Plowhandles family to control any popular election where they think proper to use their power.

Now, the next thing we have to do is, to form Agricultural Societies in every county, at least one, and generally two or three. I do not mean a society with a big man for President, another big man for Secretary, and a third big man for Treasurer, who never meet, and nothing to preside over, no proceedings to record, and no money to receive or disburse. I know of the existence of several societies of this kind, and if they have been productive of the slightest good to their members, or to anybody else, I have yet to learn it. I want live societies, with live members, presided over by a live man, with a live Secretary, and a live Treasurer, meeting every fortnight or every month, discussing all subjects connected with agriculture as occasion, season, or interest may suggest, interchanging experience, investigating the merits of new plans of culture, of newly invented implements, and of new systems, comparing from actual experiments the value of all manures, and publishing regularly in a concise form, for the benefit of others, the important portions of the proceedings of each meeting. I do not want set speeches, or platforms, or resolutions, and least of all do I want orations. I want plain,

practical talks, in which the talker thinks more of the substance of what he says than of the form of saying it. Valuable information on agriculture is what I am after, not fine rhetoric. If a good citizen in a wool hat and copperas homespun can give me advice as to the culture of corn or cotton, plowing, manures, grain-growing, etc., I want to get it, although in every sentence he tears Lindley Murray to tatters and puts Quackenbos' teeth on edge. I know a number of wool hats and copperas homespuns, members of my family, who have first-rate practical ideas, and can express them well if you give them their own way, but they will not speak in public meetings, with big speeches and parliamentary rules.

What we want, then, is a meeting where men of all classes in a neighborhood interested in agriculture, will come together and talk about what they know best, say once or twice in each month, and will keep and publish notes of what they say, for the benefit of others. A few active men in each neighborhood can form such a society. By-and-by others will join and drop in, and if the interest is properly kept up, and with good management, there will soon be plenty of members. Such a society will need little or no money at first. A room wherein to meet, a blank book, and a few pens, and a bottle of ink, constitute all the furniture necessary. The meetings can be held, if desired, at different farmer's houses, and at such hours as will be most convenient to the majority of the members, and the only refreshment at all necessary or desirable is a bucket of fresh water, with a gourd attached. Have no solemnities or ceremonies, and let every one be encouraged to talk.

Let neighborhood societies correspond with each other and with the State Society. Let a library of agricultural books and periodicals be founded from however small beginnings. Vast good can be done in this way.

If at one meeting discussion arises as to any new invention, new implement, or other novelty, let a committee be appointed to test its value and adaptability, and report at a future meeting, and let these reports be carefully preserved and published in the agricultural papers, the editors of which can offer no more interesting matter to their readers.

When once a number of these societies are formed and under good headway, most of their members will join the State Society, take a lively interest in its proceedings, and avail themselves of the great mass of valuable know-

ledge which the central association will be enabled to publish.

We shall then know, not only how to plant, and what to plant with profit and the improvement of our farms, but we shall know how much to plant with a view to the law of supply and demand. Now we "pitch our crops" blindly, trusting entirely to chance, without a shadow of information as to the true state of the markets, the stock on hand, or the probable demand, except what we derive from those whose interest it is to delude us and get our produce on their own terms. To illustrate: What Plowhandle of us all has any reliable information at this moment as to the size of the cotton crop of 1869, how much has been exported, how much consumed by manufacturers, and how much on hand? Who knows anything of the cotton production of other countries, and how much is needed from all sources to supply the demand of the world? We know only what the "price currents" and trade circulars of cotton buyers and manufacturers in Massachusetts and Great Britain tell us, and if we have any sense at all, we know that these sources are unreliable because directly interested in misleading us. I venture to assert that there are not a dozen planters in Georgia who can state within twenty thousand bales the exact crop of Georgia in the last year; and not half that number who know, except from the figures of the Agricultural Department at Washington, or from the publications of Yankee or English manufacturers, how much cotton was raised in the South in 1869.

It is evident how valuable would have been even approximately accurate information. Had we possessed it, it is scarcely credible that the all-cotton folly would have prevailed to such an extent.

And so of everything else in our line. We need accurate information—facts and figures—and the only way we can get it is by the co-operative system, and the neighborhood agricultural societies are the most effectual form of co-operation.

I might dilate further on the advantages of these societies to ourselves and to our neighbors, but am admonished by the already too great length of this communication to stop and leave the rest to another letter, at some future time. With respect,

JOHN PLOWHANDLES.

Be slow to choose a friend, and slower to change him; courteous to all. Scorn no man for his poverty; honor no man for his wealth.

Mr. Gustin and Dr. Dickson Smith.

HOUSTON COUNTY, GA., August, 1870.

Editor Farm and Home:

As an attentive reader of your valuable magazine, and endeavoring to gain information by both practice and theory, and having read with much interest the many interesting articles which make up your valuable magazine, and being most deeply interested in the pungent and able communications contributed by Mr. Gustin and Dr. J. Dickson Smith, I but reiterate the universal sentiment of the people of Houston, when I call upon those eminent planters and scientific gentlemen to favor us with their mode of culture, amount of fertilizers used per acre, and at what time and in what manner applied. Also, condition of their crops, and prospect of yield for the present year. A timely response from the above named gentlemen will interest and oblige

MANY SUBSCRIBERS.

[Will the distinguished gentlemen referred to above favor us with the desired information?—
ED. S. F. & H.]

For the Southern Farm and Home.

Wheat, Clover, and Rotation of Crops.

Mr. Editor: The experience of this year will, I hope, make many of our farmers, especially in Middle and Northern Georgia, devote more land to wheat than they have been in the habit of doing; and I hope that before the end of the next month many a broad acre will be seeded down in the most profitable and best crop which can be raised in the section to which I have referred.

The experiments of the few gentleman of the Athens Wheat Club in 1867-68 demonstrated beyond the shadow of a doubt what can be done by careful tillage of the land, liberal and judicious use of manure, the selection of good seed, good sowing and covering, and the timely after-culture which has been found necessary to insure the greatest success.

On thin poor old fields, in and near Athens—almost as poor land as any not absolutely barren to be found in Georgia—these gentlemen raised from forty-six and a half down to twenty-nine bushels per acre. To obtain this result, they plowed the land in the most approved manner until it was thoroughly pulverized, as for turnips. They also, in many cases, subsoiled it to a considerable depth. In October, about the last week, they sowed the best and most carefully cleaned wheat they could obtain, (the Tapahannock variety was, I believe,

used by a majority.) When the seed was closely and evenly covered by being plowed in by a scoter plow, the land was rolled, and I think, if I remember rightly, it was again rolled in the early spring. Cotton seed at rates varying from one hundred to fifty bushels per acre, and a fertilizer composed of Peruvian Guano and dissolved bones, at the rate of 300 or 400 pounds per acre, were the manures employed. In two or three instances, clover was sown immediately after the wheat, and harrowed in with a brush, and where this was done there are to-day clover patches as fine and as productive as any to be found in Kentucky, Tennessee, or Virginia.

We may depend on it that until we adopt the system of rotation of crops, abandon the year-after-year growing of cotton on the same land, and make the effort to fertilize our lands with clover, our boast of "improved agriculture" is a delusion and a snare. Rotation, or in other words, the alternation or succession of different crops upon the same lands is the only mode of obtaining the largest product from the soil, and of keeping up its condition. So essential is this rotation considered in England, where scientific agriculture has reached such a high degree that in the leases granted to the tenant-farmers by the proprietors, the rotation and the course of the different crops are distinctly described in the lease, and cannot be departed from without a forfeiture of the obligation. The English divide their crops into white and green crops, the grain crops being called white, and the root and vegetable crops—turnips, mangold, wurzel, carrots, parsnips, beets, cabbages, peas and beans—being called the green crops. The course in the best agricultural counties generally extends over six years, as follows: 1st. Rutabagas, well manured and fed down by stock; 2d. Barley or oats; 3d. Clover; 4th. Wheat; 5th. Peas or beans; and 6th. Wheat. This should of course be modified in our country, as for example—1st. Corn and peas; 2d. Wheat and clover; 3d. Clover; 4th. Cotton; 5th. Corn and peas; 6th. Wheat and clover. Or, 1st. Cotton; 2d. Corn and peas; 3d. Wheat and clover; 4th. Clover; 5th. Cotton; 6th. Corn and peas.

Will some of our farmers make a beginning this fall by breaking up thoroughly a portion of their corn land, manuring it liberally with cotton seed and good superphosphate, well plowed under before sowing the seed, then sowing after the seed wheat, has been plowed in, twelve or fourteen pounds of good clover seed per acre, and then brushing and rolling the whole? If

they will, we promise that whoever does so will reap a good crop of wheat, will secure a good stand of clover, of which he will cut two heavy crops in the second year, and having turned the clover sod under in the fall of the second year, will have first-rate land for cotton in the third year, from which he can gather a fine crop.

An "all-cotton and no corn" man will, of course, scout such a "waste of land," but we venture to state, for the benefit of such a man that he who tries the rotation will at the end of the sixth year have made more clear money, have more money in his pocket, have richer land and better stock than the man who raises cotton year after year upon the same land.

Many cotton-growers think me crazy on the subject of clover—that I have "clover on the brain"—but I am so perfectly sure that clover, lime and plaster are the surest and cheapest renovators of our worn-out land, I venture to lay my views before your readers, in the hope that many will adopt them and follow the course I recommend.

ROTATION.

The Use of Lime.

It cannot be expected to make every reader of the *Southern Agriculturist* a chemist, but it can be the medium of imparting to its patrons all the necessary information to make them chemists for all practical purposes on the farm. It is important that each farmer should have a close approximation of the chemical component parts of the lands from which he expects his living. Therefore, we shall take pleasure in publishing articles on such subjects as lime, salt, plaster, marl, muck, silica, and their peculiar benefit to the different soils. To this end we reproduce from Mr. Cameron an article on lime and its chemical advantages to agriculture:

The action of lime is two-fold: first, physical, and second, chemical. As a mechanical agent it opens stiff clays, rendering them friable, mellow and more easily worked chemically, it acts upon the vegetable matter of the soil, and sets free those stores of valuable substances which, without the action of this agent, must have remained inert and useless. It also enters directly into the composition of plants, and in many varieties form a large proportion of the weight of their inorganic constituents. It neutralizes acids which are often present in soils, rendering them useful to vegetation, instead of being positively injurious, which they are in their original state.

The existence of water in the soil, however, effects action of lime very considerably. If the land is wet and undrained, lime will not exert the same influence which it would do in the case of thoroughly drained land. A greater quantity of lime is necessary to produce a given effect, and thus the neglect of thorough drainage entails a considerably greater expenditure in lime-

ing than would have been necessary if the land was either naturally or artificially dry.—*Louisville (Ky.) Southern Agriculturist.*

Hedges for the South.

IN reply to many inquiries as to the best hedge plants, and the best mode of planting a hedge, we copy the following article from the *Southland*, by D. Redmond, whose success and skill as a practical agriculturist and horticulturist attest the value of his written views:

THE MACARTNEY ROSE—"DITCH AND BANK" HEDGE.

Having shown, in the last number of our journal, the enormous expense, and the very perishable and unsatisfactory character of our ordinary modes of fencing and enclosing lands, we now proceed to describe a style of *hedging*, which, if generally adopted throughout the South and Southwest, would save our people millions of dollars in a few years—preserve our timber for other and more needful purposes—render our orchards, gardens and plantations secure from trespass, theft and intrusion, and make our homes in the country far more valuable, enjoyable and attractive.

The most important requisites of a farm and plantation hedge plant are—

1st. Facility, cheapness, and ease of propagation.

2d. Vigorous, rapid, hardy growth, and perfect adaptation to our climate.

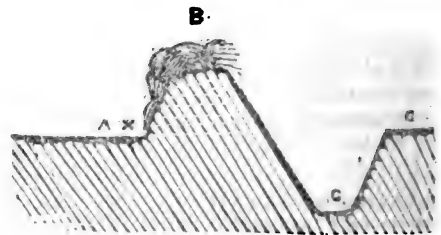
3d. *Defensiveness*, combined with longevity; and beauty of plant, foliage and flower.

All these requisites are combined in the *Macartney Rose* to a greater extent than in any other plant with which we are acquainted. *Cuttings* of eight to twelve inches long, planted in November or December, "strike" almost as freely as those of the willow; it is a very rapid and vigorous grower, resisting our hottest suns and retaining its freshness and verdure at all seasons; every branch and shoot is covered with long, stout, recurved thorns of the most formidable character; it is an *evergreen*, with delicately small, dark green foliage, and beautiful white flowers, which appear plentifully at intervals throughout the year—frequently even at mid-winter; and its dense habit of growth and disposition to throw out numerous short laterals or side-branches renders it a very easy matter to trim and keep the hedge in a compact and proper form.

A *Macartney Rose* hedge, properly planted, is a permanent and enduring *protection* to plantation, farm, orchard, or garden; but, as this hedge necessarily occupies some space, and cannot very easily be removed or destroyed when once thoroughly established, we desire particularly to recommend it for *outside* enclosures and *boundary* fences between plantations and farms. Should its value be fully recognized for such purposes, and should our people advance a little farther and utterly discard about four-fifths of the unnecessary and unsightly cross-fences which disfigure our rural landscapes, and adopt the economical, profitable and humane

system of yarding and "soiling" their domestic animals, all lovers of Southern Agricultural progress would gladly hail the dawn of a new and more hopeful era. That the rapid destruction of our fencing timber, (with no provision for its replacement,) the increasing value of land, and the necessity of greater production as our population multiplies, will sooner or later compel our people to adopt better, simpler and cheaper modes of enclosing land, or oblige them to dispense with all enclosures, on the European plan, is among the certainties of the future; but as that "good time" now seems somewhat distant, we will proceed to point out the mode of preparing for, planting and trimming a perfect *Macartney rose* hedge.

If this hedge is to form the boundary between two farms or plantations, the proprietors of each may combine their forces in the labor and expense of its construction; but, in order to control the hedge entirely, (cultivating and trimming according to our judgment,) we have generally preferred to make both ditch and bank upon our own land, allowing the outer edge of the ditch to mark the boundary line of the public road, or of the fields of our neighbor. This boundary line having been accurately ascertained, staked and lined off, and all trees and underbrush removed for a width of at least fifteen or twenty feet on the proposed line of the hedge, we proceed to lay off the ditch from three to four feet wide at the surface, and of proportionate depth—say from two to three feet deep, sloping from the surface to the bottom, as shown in the accompanying diagram or vertical section of "ditch and bank" hedge—at c.



[EXPLANATION—*a*, inside of field, (surface,) near base of earth-bank in which the rose cuttings are planted, inclining toward top of bank; *b*, top of bank, with rose growing over; *c*, ditch; *d*, surface of neighboring field, or public road.]

As the earth is dug out and raised from this ditch, it is carefully deposited on the inside surface, (see left of diagram,) and carried up with the same gradual and regular slope which is preserved in digging the ditch from the surface to the bottom, as shown above. Should the earth be heavy and tenacious, this bank will need little "treading" or "beating;" but if the soil is light or sandy, it will be necessary to make it solid and compact enough to resist the rains until the rose cuttings grow over and protect it. This "compacting," shaping and sloping of the bank is readily performed thus: As fast as each layer of earth five or six inches thick, is laid out on the surface, the ditcher or his assistant tramps heavily with both feet along

this fresh earth, (with his face toward the ditch,) stamping it down with his full weight, and shaping and sloping the bank by "beating" it forcibly with the back of his spade. This is a very important point in the construction of the "ditch and bank" hedge, and one that must not be neglected; as upon its proper performance depends in a great measure the durability and permanency of the bank, which is indispensable as a support to the hedge during the first two or three years.

[The great value of this bank, or earth-fence, is that the material of which it is composed is cheap and inexhaustible—it forms a hindrance to stock, etc., at once, and secures us a hedge which is close and impassable at the bottom. Of most of the Osage Orange, *Pyracantha*, and other hedges, planted on the level, this *openness at the bottom*, (from want of close and frequent trimming while the plants are young,) is the fatal defect; and has probably had more influence than all other causes in rendering *live hedges* unpopular with the masses.] But we proceed with our directions:

Throwing out the earth on the surface, and carrying the face of the bank upward, with a true slope—treading it and compacting it by blows of the spade, as described—the contents of the ditch, at the finish, will be found in the shape of a solid bank piled upon the surface on the inside of the ditch—the whole ditch and bank occupying a strip of from six to eight feet of space, along the public road, or around the plantation. In finishing this earth-bank, the top should be about ten or twelve inches wide and perfectly straight, flat and level (directly under *b*)—rendered so by beating with the spade, while the earth is moist and fresh. This ditch and bank, (constructed in all respects as we have described,) forms a barrier at the outset that few domestic animals will even attempt to get over; but to "make assurance doubly sure," we usually lay flat rails carefully along on the top of this bank (under *b*.) and secure them in place with two "stakes" and a heavy "rider"—one long stake running down the sloping outside of the bank to the bottom of the ditch, and a short one resting on the inside of bank, where the rose-cutting (*x*.) is represented in the diagram. These rails, "stakes" and "riders" should be sound enough to last two or three years, after which they may be allowed to decay and form nutriment for the hedge-plants—which will then bid bristling and thorny defiance to all comers.

Preparing the Hedge-Row—Planting the Cuttings, and Trimming the Hedge.

If the strip of earth upon which the bank is built up is open and free from roots, stumps, etc., it will be of great advantage to give it a good breaking up with a double plow before digging the ditch; but if the hedge is made in new ground, it will only be practicable to run several close and deep furrows with a long scotter or bull-tongue plow at the inside base of the bank, near *a* and the *x* mark from whence the cutting starts, in the diagram. This plowing at the base of the soft earth on the inside of the

bank prepares the ground for the cuttings, which should be made from eight to twelve inches long, and set sloping and pointing upward toward the top of the bank. They should be planted twelve or fifteen inches apart, along a tightly drawn line—and set into the soft earth in holes made with a strong, slender "dibble," or sharp-pointed stick, with only from one to inches of the top of the cutting showing above the surface. This should be done in November or December, and the following summer the young hedge-plants and the inside of the bank upon which they grow, must be kept free from grass and weeds; and fresh soil must be thrown toward and over the roots once or twice during the summer with a light turning-plow. When the plants are a year old, the missing places, if any, should be replanted with fresh cuttings, and a top-dressing of stable manure or good compost scattered over the surface, near the roots, in the fall or early winter. Should any grass or weeds grow on the *outside* of the bank during the first summer they must be carefully cut or scraped off with a keen-bladed hoe, without disturbing or loosening the face of the bank. At the end of the first year, the cuttings will have crept up the bank and began also to spread laterally and cover it—some shoots growing over the flat rail on the top, under *b*, and showing in front toward the ditch, *c*. All that is necessary during the first and second year is to keep the young plants free from grass and weeds, on the inside of the bank; to stir the ground a little from *a* to the base of the bank from time to time; and to give any shoots that show a tendency to straggle back toward *a* an upward and outward inclination in the direction of *b* and the crest of the bank. This is rapidly done by one person passing along the inside and lifting the shoots into place with a forked stick, while another follows and drops a spadeful of earth upon them to make them strike root on the inside slope of the bank, and to keep them from moving afterwards.

At the close of the second year, the plants will have attained sufficient size and strength to "take care of themselves"—the inside of the bank will be entirely covered with a dense mass of strong, thorny branches and shining green leaves—interspersed here and there with beautiful white flowers!—and the *hedge* may be considered almost finished. If it has made a vigorous growth on top of the bank, the "stakes" and "riders" may now be removed; and the straggling end shoots clipped along the outside just below *b*, to produce a denser growth on the summit. At the beginning of the third year, the hedge will present the appearance of our diagram, with a heavy growth of thorny branches and green leaves piled up on top and growing partially down the face of the bank. The after-clipping is the simplest possible matter: one man with a two-handled hedge-shears walking "sideways" along in the bottom of the ditch, facing the bank, and clipping off, as fast as he can walk, all such shoots and branches as seem disposed to run too far down or to straggle across from *b* to *d*. These thorny clippings may be allowed to lie in the bottom of the ditch—a "terror to evil-doers"—or, having dried

sufficiently, they can be raked out into piles on the surface, at *d*, and burned.

These trimmings should be made twice a year, or as often as may seem necessary—the labor being really *inconsiderable*—the ditch always forming the barrier and boundary beyond which the hedge, be it ever so rampant, is not allowed to grow or extend.

A rose hedge of this kind, properly started, and cultivated as we have described, for the first three years, or until it becomes *defensive* and *impassable*, should not at the present rate of labor cost more than \$1 50 or \$1 75 cents per rod, and the annual expense afterwards for a series of years will certainly be less than the annual repairs of a rail or any other wooden fence.

As to comparison in value or efficiency between such a hedge as this and any kind of timber fence now known—there is none whatever!

This hedge is ornamental, defensive and permanent. It is primarily a “thing of beauty,” surrounding farm, plantation, orchard, vineyard and garden with a wreath or wave of verdure and floral loveliness, and affording the fullest protection to all that it encompasseth. It is very fair to the eye, but its motto is *noli me tangere*! and who or whatever essays to scramble over, scale, or “break through and steal,” will surely come to bitter grief. As the poet has it, these bright rose leaves

“Are cool and green;

But the thorns are hot and sharp!”

and any animal void of wings will only need one trial to be convinced how much pleasanter and safer it is to “pass by on the other side.”

We make no apology to our readers for the length or particularity of this article. The subject is one of great interest to all country residents, and of the most vital importance to landholders on the prairies of Texas and other sparsely-timbered districts. It offers, at a very cheap rate, a permanent protection against theft and annoyance, and secures to the industrious farmer, orchardist, or gardener, the fruit of his labor—thus giving our Southern country homes a value and attractiveness which at present they do not possess. A general system of *defensive* live hedges like this would have a strong tendency to check the roaming vagabondage and lawlessness now so prevalent. It would greatly lessen the temptation to pilfer and enforce a wholesome regard for the rights of property—teaching the apparently little-understood difference between *meum et tuum*; and, looking at the matter both physically and morally, we deem it among the most desirable agricultural reforms and improvements of this progressive age.

(NOTE.—The writer has given many years study and attention to the matter of hedges and fences, and is fully and deeply impressed with the importance of inaugurating such a reform and change as he has above indicated. He will be glad to give additional suggestions on this topic, through the *South-Land*, to any one who may desire further information.)

Love one human being purely and warmly and you will love all.

Fencing.

A CORRESPONDENT SAYS: “The question has been asked, in times past and greatly distant, what are we to do for fences? We have done somehow and various ways—taken fences away from cotton patches and corn fields and put them around pastures, tried bois d’arc (Cherokee rose,) ditching—but satisfaction has not yet been reached. I have seen a fence of twenty years standing that comes as near being horse-high, bull strong, and rat tight as any fence I have ever seen. It is beautiful, fruitful and ornamental. It does not absorb to any great extent the strength of the land, and seems to grow better as it gets older, does not shade the land, fowls will fatten on the fruit, which will make a good syrup, a good dye, and many persons are fond of the fruit for food. It grows well on poor land; will grow without cultivation, will do better with it; grows in the shade or sunshine.

The fence that I have seen is on the plantation of Peyton T. Graves, of Lowndes county, Alabama. The plant is the cactus. I have tried one hundred and fifty yards of it this year. I broke the land up five feet wide, laid the cactus on the surface in rows five feet wide; don’t cover up with dirt at all. It will sprout and grow; weeds may choke it, bushes shade it, but it will lift its head into sunshine at last. Thankful, it appears, for all the help you may bestow, but if you put it in the bottom of a gully, it will sooner or later fill it up. If you put it in a hog hole, hogs must make their *debut* into the corn-field in some other direction than where it has been placed, after a little while, or else have their nozzles pierced with thorns to an extent that it will be unpleasant to use them even in a fresh corn field. H. H. S.”

Paints for Farmers, and How to Use Them.

BY H. E. COLTON.

NOTHING adds so much to the saleable qualities of any buildings as bright, neat paint. On the farm it gives an air of thrift and taste; the milk seems cooler from the painted spring-house as we sit beneath the shade of the rich green leaves of the wide-spreading oak and drink it. The traveller passing the road is refreshed by the sight of the cozy cottage and the neatly-painted out-houses. If there is any one thing that makes New England villages superior in looks, at least, to the rest of our country, it is the universal use of paint. A paint dealer once told us that more paint was sold in one little Massachusetts county than in half a large Western State, and more than in two or three Southern States. No one who has ever had to “take it along the dirt” but can appreciate the

feelings of a Massachusetts boy we were once travelling over the South with in a buggy. For days we had stopped at one or another style of farm or plantation-house. Some showed traces where paint had been, but there was a general air of bare-woodedness. Driving along one day, we spied a brightly-painted house. He clapped his hands for joy, and declared he wanted to stay in that house one night anyhow. To those who intend to take "a boarder or two" for the summer, a general brushing and a judicious use of paint is especially necessary.

We assume, then, that the farmer proposes to paint his house, and desires some information of us. Of all pigments, white is the most extensively used. White paints are either carbonates of the hydrated oxide of lead, called white lead, or the oxide of zinc, or mixtures of these two; though of late a peculiar combination pigment has been placed on the market which is a new substance, and strictly neither of these. The first (white leads) are divided into English and American. The English brand, stamped "B. B." is the whitest lead known, simply from care in its preparation. When a person intends to paint his house only once in five years, and desires a very white job, we would say, by all means use this pigment. Its cost is usually about three cents per pound more than American leads. There are various brands of American white leads, having varied reputations, but all made by the same process, and perhaps equally good, only differing as to taste and prejudice. The fault of all these white leads is, that after a time they turn yellow, are poisonous to use, and are disposed to become chalky on exposure to the weather. American leads are worth from 11 to 12 cents per pound ground in oil, wholesale.

The second pigment mentioned—the white oxide of zinc—consists of two general varieties, French and American; the latter again subdivided into as many varieties as there are companies manufacturing. The French article is made from metal zinc, and is very white. It is chiefly used for the interior work of houses, steamboats, etc. Its cost is about 50 per cent more than the ordinary American article. All the American zincs are made from ores of that metal direct. The Lehigh ranks highest, and the New Jersey next. But little of the former is now made, and the latter is mostly used for adulterating lead, as we shall hereafter mention.

The third style of pigments are comparatively little known, but are destined to supply a large part of the paints of the country from their peculiar and valuable properties. There are pigments derived from the sulphurets of zinc and lead, an ore heretofore considered almost useless. They contain lead and zinc combined, and are made by the same fire process as the oxide of zinc. They possess great body, cover a large surface, are intensely opaque, are very cheap, and are about as white as the average American leads, possessing the property of growing whiter instead of turning yellow. The most extensively known of this class of pigments is called the Bartlett lead. It is sold, ground

in oil at about nine to ten cents per pound, wholesale.

We have here stated the three classes of pigments which are to be found on the market pure. It is the custom of grinders to make a large range of mixtures of these pigments, especially white lead and oxide of zinc, with a ground rock called barytes, which is chemically a sulphate of baryta. This substance is chiefly found in the enterprising little State said to have also adulterated our nutmegs with wood. Though its production has carried much money to that State, it has been of great injury to the world. The demand for cheap paints during the war increased its consumption, so that it has been estimated that in 1866 over 30,000 tons entered into the manufacture of paints. It is simply of no value whatever. Any person buying a lead below the quoted market price may know he does not get a pure article. These adulterated grades usually have some fancy name, and no respectable house ever puts their own name with the word "pure" on such brands. These grades have a use, however, for a class of cheap painting, being a little better than common whitewash; yet the best is always the cheapest in the end.

COLORED PAINTS.

The white paints are, in great measure, the base of all the colored paints. Of reds there are three: red lead, American vermilion, (a dichromate of lead,) and Chinese (or quicksilver) vermilion. The latter is the most durable color, and also the most costly. The first is excellent for iron, the second for fancy wagon painting. In buying the first be careful to see that it has been freshly ground in oil, as it soon hardens in the cans. The first is worth about twelve-and-a-half to fifteen cents; the second about thirty-five to forty cents; the third, \$1 25 to \$1 50 per pound.

BLUE.

The most durable blue is ultramarine, but it is a pale color, and for ordinary uses the various Prussian blues are sufficiently good.

YELLOWS.

The most durable yellow is ocher; there are several varieties, and of them the French is the best. It is a pale yellow, but answers very well for tinting white paints. The brighter yellows are chromates of lead, zinc, or tin. The first is more general. Cadmium yellow is a very brilliant and durable color, but is costly. All the chromates being made from bichromate of potassa, one of the most powerful oxidizing substances, are liable to change color from action of the atmosphere. No American ocher has yet been sold equal to the French, though many of them answer well for common painting, as roofs, barns, and fences.

GREENS.

The most brilliant and durable green is a deadly poison and should never be used—Paris green. There are many substitutes for it, some of them answering the purpose so well that its use should be prohibited. The other greens are made from mixtures of blue and yellow col-

ors, and depend for quality, etc., on manipulation and care in mixing.

BROWNS, AND OTHER SHADES.

One of the reddish brown paints is Prince's metallic paint, a protoxide of iron which is unchangeable in any air or atmosphere. It is undoubtedly the best paint of its kind on the market at present. There are others, however, not so high-priced, nearly as good. Venetian is an oxide of iron of a red color, slightly brown, which will answer as a cheap red. There are also mineral paints which have purple and slate colors, which answer for common work, but for any nice house-work we would advise the painter to use good white lead, or other pure white pigment, tinted to suit his taste. The best black paint is a composition of bone-black and other substances; the common qualities are made from lampblack.

We have briefly sketched the principal pigments, and having told the farmer what materials he should use, we shall endeavor to show him how to use them to the best advantage.

Nothing so much offends the eye as a want of harmony in colors, a want of taste in their combination in a house, a glaring loudness in their contrasts. For instance, we once saw a house, the main part of which was painted white, the sides of the windows and doors blue, the blinds green, and then there was a strip of yellow and red on the cornice. At first sight one would say that was a color-manufacturer's advertisement. But it wasn't, and the people who lived therein thought it was superb. If you have a green grass lawn about your house, and many large oaks, your house must be white by all means, in fact, white body with green window-blinds, and a cornice tinted light brown, with Prince's metallic paint, always looks well. With green shrubbery a French gray looks very handsomely. Some like a soft dove-color, with brown cornice. Where there are no large trees a house should invariably be painted a tinted color. Of these there are many. Use white as a base, with French ochre, a pretty light canary or buff is gotten; with Prince's paint, various shades, light or dark; with the same and a little vermilion, from a lilac to a purple; with blues, various tints, from a light French gray to deep pearl color or darker; very yellow canary, with chrome yellow. Lampblack is also used to produce grays and dark lead colors, though good ivory black is best.

It is, perhaps, needless for us to give any receipts for producing shades of colors, as the color must be added to the white to suit the taste, and, too, some whites take color quicker than others. The best way is to try the mixed color on a board to see if it suits the eye, as a color in the mixing-pot looks darker than it really is. Then, too, most of the tints now so popular may be bought already ground at any large paint establishment under the heads of cottage, household, or railroad colors.

In years gone by, nearly all pigments were bought in a dry powder and mixed in oil by the user on the old-fashioned muller-stone. Now immense establishments grind all their dry pigments in a certain quantity of oil before they

are sold. This adds greatly to the convenience of the user, and it is becoming very common now to send out paint already "thinned" for use. The day may come when this system will be as common as is now the mere grinding in oil. The paint in the hands of the farmer, he desires to thin it down for use. To one hundred pounds of pure white lead it is usual to add from three and-a-half to four and-a-half gallons of linseed oil and one-half gallon of spirits of turpentine, for outside work. During the war benzine was largely used for cheapness, but with the present low price of spirits turpentine, it is folly to use benzine. These preparations of liquid should be added gradually, and the mixture vigorously stirred. Some, after thorough mixing, complete the operation by straining through a fine sieve; this certainly benefits the paint. If it is desired to color the paint, just before straining is the time to add the coloring pigments. This should first be mixed up with oil and spirits turpentine, as the other, then added in quantities to suit, and thoroughly incorporated. The paint is now ready for use, and if any of the ordinary white leads or zincs must be used immediately, the Bartlett lead possesses the peculiar quality of being held in solution to a great degree, and does not settle, while all other leads and zincs settle and require remixing, if allowed to stand. There is some skill in handling a brush, else there would be no use for the painter, but almost any farmer can do the coarser parts of his own painting. Inside work is more delicate, and for a nice parlor job nothing looks so well as satin gloss or china white, which is merely the best French zinc ground into poppy oil and white Damar varnish. It is sold in cans ready for use, and has to be used soon after opened, as the varnish drying out, it becomes hard in the cans, or requires re-thinning with the rather costly Damar varnish.

The covering properties of paints differ; but a gallon of properly mixed paint should cover first coat, about twenty square yards, and second coat something more. New plank, never before painted, should be given three coats, the first very thin with oil. Painting in the Spring is most economical, as the wood absorbs least oil, but painting in the Fall is likely to last longest. Our advice to a farmer would be to paint every building he has. Some say that a house where the boards are run up and down does not require paint. We admit that if those boards are the very best quality of heart pitch pine or white oak there may be no very great temporary advantage beyond good looks, but ninety one-hundredths of the plank used now-a-days absolutely requires painting to make it last a respectable length of time. To the farmer we say, by all means paint, and to use the best and purest paints.

Brick work, in our opinion, should, when new, be given a coat of linseed oil before being painted. A good imitation of Philadelphia brick is sold as brick-red in all the stores, ready for use.

For common inside painting it is customary to put, first coat, half each linseed oil and spirits turpentine; second or last, nearly all spirits

turpentine, with not more than a gill of oil to the gallon of spirits and pigment. Boiled oil is used to make a rapid dryer, and but for the fact that it turns yellow, is, when pure, of much use, but it is so outrageously adulterated at the present day that it is comparatively useless. Especially, too, when the longer a paint takes to dry, the better it is apt to last.

MIXED PAINTS,

ready for use, white and all colors, are sold now by nearly all dealers. There is a class of them which are merely soaps, being made with large quantities of water and chemicals to form a union between the oil and the pigment, which will not settle. Hence, they cannot be of much value for outside work. In buying such pigments the farmer should be sure that his purchase is not of this character.

WHITEWASH.

An old painter informs us that the best whitewash a farmer can use is made from sour butter milk and lime. Oil in whitewash and a little glue adds to its durability, but we are told that the buttermilk whitewash will last almost as well as paint. Whitewash may be tinted with ochre for buff or yellow, or lakes for pink.

Cooking Grain—Its Economy and Profits.

WHILE many if not most of agricultural papers are advocating the cooking of meal for stock, but few if any of them give us the reasons why it should be practiced. While the mere statement of the fact may work good to the cause, it is very certain that if accompanied by good sound reasoning, it will be still more certain to accomplish the desired purpose.

Examination will show that a whole grain of corn is enveloped in an almost indigestible hull or husk; hence it often happens that when the grain is fed in a whole state, without being broken, it passes through the digestive organs entirely unbroken, and is totally lost to the animal. A more critical examination of the grain will show that it is composed of a number of very minute particles, enclosed in a similar hull, which, like the outer coating, is to a certain extent indigestible. These particles being very minute, are not noticed in the excrements, though it has been clearly proven that even where the grain is finely ground, quite a large percentage of these particles escape with their coverings unbroken and their contents unappropriated by the digestive organs of the animal. These cells are so minute that even in the finest ground meal from one-fourth to one-half of these escape unbroken from the mill. In an animal in low flesh but few of these particles escape the digestive organs, but as the animal lays on flesh and becomes fat, more and more of them pass through uninjured. Those who have fed cattle until they were very fat, know that enough will escape (even when they are fed on fine meal,) to show plainly in the excrements. With pigs the same is true, though they do not show it as soon as cattle—but if fed on whole grain, they will void a large amount.

Microscopic tests have shown that in corn meal, as it is usually ground for stock, fully fifty per cent of these minute cells are unbroken, and to reduce these and make sure that they are not wasted, is the desire of every one who wishes to make the fattening of animals profitable.

Nothing has yet been found which is superior to heat for breaking up these cells, though thorough fermentation will reduce many of them. In the old-fashioned mode of boiling the meal in an open kettle, there was so much trouble necessary to prevent burning, so much labor in cleaning the boiler, and such constant attention required, that many who were thoroughly convinced of the saving results from boiling, were deterred by the large amount of extra trouble, and the danger of the loss of the whole vessel full from burning. In this plan, without the process was long continued, the benefit was but partial; and the whole mass must be kept in constant motion, and a high degree of heat could not be attained without great danger of loss.

Since the introduction of portable steaming apparatus, all these objections have been removed; food may be cooked in the same barrel or tub for an indefinite length of time, without cleaning; no stirring is needed, as the steam, if admitted at the bottom of the barrel or vessel in which the meal is cooked, will keep the meal and water thoroughly mixed up; a much higher degree of heat may be attained without the least danger of burning, and no further attention is needed than to keep the fire from going out. It is a well known fact that steam under pressure may be raised to a much higher degree of heat than water in an open boiler; when steam is made use of, this increase of heat is all made available for the purpose for which it is generated.

Some are of the opinion that although steaming meal will pay when done on a large scale, yet when practiced for only four or five pigs, it will not be found profitable. After a few years' experience with only the above number of pigs, I am satisfied that the first cost of my portable steamer is entirely repaid every two years, and also leaves a margin of profit beside; in other words, I am satisfied that even with the above number of pigs, cooking their food will pay, and not only this, but also pay well, and reduce the cost of keeping them fully fifty per cent. One great item in the saving is in the fact, that thorough cooking renders refuse potatoes available for *fattening* purposes. My experiments, with scales handy and every precaution taken to make a fair test, prove that when corn is worth one dollar per bushel, boiled or steamed potatoes are worth fifty-four cents for fattening pork. I never have derived any benefit from feeding *raw* potatoes to pigs; but suppose they are worth twenty-five cents per bushel *raw*—as my average amount of small potatoes is from seventy-five to one hundred bushels, I may credit my steamer with not less than twenty-five dollars on this account alone, independent of the benefit of steaming the corn meal.—*Cor. Practical Farmer.*

"Worn-out" Farms and Plantations.

THERE is some good advice in the following from JOSIAH CLARK, in the *Germanatown Telegraph*:

There are four elements that go into the construction of every living thing, both animal and vegetable; these elements are iron, lime, potash and salt. Now it is evident to any thinking mind, if this be so, and any one of these elements be lacking, feeble results follow; for instance, take a very large, big-boned man, whose bone structure seems almost giant-like, and which depend mainly on lime for their structure, and let such a man be deficient in iron and he is deficient in strength. Though his bones be sufficiently large to constitute a giant, yet how often have we seen his heels thrown in the air by the quick movement of a strong, closely-built, small man, whose whole system was fully developed. Then again give the animal all the elements and in proper proportions to the full development of every part until it has fully matured, and then cease or leave out only a small part of one of the elements, and he soon ceases to be perfect; for instance, keep a man on wheat, with nothing taken from it, which in this state is one of the best articles of diet for development and preservation of both mental and physical powers in use; now change the diet and give him what is termed the best brand of flour, and you will soon observe the difference both in mental and physical powers, for the reason that the greater portion of iron and potash is withheld.

As it is in the animal, so it is in the vegetable kingdom. Farmers use the same sized dungcart, and haul to their corn and wheat fields the same number of loads their fathers did, but fail to realize half the crops they did. After repeated trials they stop in despair, and wonder what can the matter be. They look to the sky, but fail to find any fault there. Some one tells them the forests are all cut away, and that consequently there is not so much dew as there used to be; but not being very scientific they can't see the point. Still standing in doubt, another comes along and tells them to add another plow to the beam, and get two more yokes of oxen and put in up to the beam. They finally think that must be what is needed, and as the old surface has been plowed so long; and so, after much sweating and hard pulling, they have succeeded in turning the old, black, good-for-nothing surface eighteen to twenty inches out of sight, and in its stead have brought to the top a splendid light blue, and with the usual amount of manure plant their crops. The result is best known to those who have done likewise; they finally get mad and run away out West.

Now, then, let us consider the cause of the deterioration of their farms. We will look first at the barn; here, on the outside, below the eaves, on the boards near the ground, is daggerretyped the perfect form of a dung heap; but then what has that to do with the matter? Let us see: Through that hole just at the top of the picture has passed all the solid, and but lit-

tle, if any, of the liquid matter that has passed through the animals kept in that barn perhaps for a century. This is indeed an important discovery for an intelligent farmer in quest of a farm. He at once corresponds with the owner out West, and finally purchases it at a cost of a small fraction above the taxes on it. We ask him why he was such a simpleton as to purchase an old, worn-out farm when he could have bought one in its virgin state. He invites us into his laboratory, and there answers the question by taking one pound of solid and one of liquid excrement from animals, and takes them apart, and proves, at least to our satisfaction, that there is about four times more salt and potash in the liquid than in the solid; we (having a vague idea of the requirements of vegetation) see the point at once.

Now let us watch this new owner and see what he does. There is a cellar under the whole barn almost as tight as a house cellar; he don't allow the sun to peep in, nor a draught of air to pass through; in place of the old holes in the side of the barn are windows; we find him in damp weather under the barn with doors open, forking over manure, and occasionally see him apply water to some. We ask the reason for that. The answer is, that it is getting too dry, and manure should always be kept moist till applied to the soil. Now we find him plowing; we observe he is breaking up ten acres of wet and ten acres of dry soil; he plows the wet in dry windy weather, the dry in moist damp weather; we ask the reason for this discrimination; he only answers, "I desire a good crop the first time, and if the seed is good, and the season, I will get it." In ten or fifteen years the original owner returns (having exhausted his splendid virgin Western farm) to find his old farm in grand condition, and the old barn once more full of sleek fat cattle.

MORAL.—Stay at home and stop abusing good Nature by returning all she gives you.

Relative Importance of the Ingredients of the Soil.

FROM the general point of view of vegetable nutrition, all those ingredients of the soil which act as food to the plant, are equally important as they are equally indispensable. Absence of any one of the substances which water-culture demonstrates must be presented to the roots of a plant so that it shall grow, is fatal to the productiveness of a soil.

Thus regarded, oxide of iron is as important as phosphoric acid, and chlorine (for the crops which require it) is no less valuable than potash. Practically, however, the relative importance of the nutritive elements is measured by their comparative abundance. Those which, like oxide of iron, are rarely deficient, are for that reason less prominent among the factors of a crop. If any single substance, be it phosphoric acid, or sulphuric acid, or potash, or magnesia, is lacking in a given soil at a certain time, that substance is then and for that soil the most important ingredient. From the point of view of natural abundance, we may safely state

that, on the whole, available nitrogen and phosphoric acid are the most important ingredients of the soil, and potash, perhaps, takes the next rank. These are, most commonly, the substances whose absence or deficiency impairs fertility, and are those which, when added as fertilizers, produce the most frequent and remarkable increase of productiveness. In a multitude of special cases, however, sulphuric acid or lime, or magnesia, assumes the chief prominence, while in many instances it is scarcely possible to make out a crop-producing value for one of these substances over several others. Again, those ingredients of the soil which could be spared for all that they immediately contribute to the nourishment of crops, are often the chief factors of fertility on account of their indirect action, or because they supply some necessary physical conditions. This humus is not in any way essential to the growth of agricultural plants, for plants have been raised to full perfection without it; yet in the soil it has immense value practically, since among other reasons it stores and supplies water and admissible nitrogen. Again, gravel may not be in any sense nutritious, yet because it acts as a reservoir of heat and promotes drainage, it may be one of the most important components of a soil.

—*How Crops Feed.*

Dr. Voelcker's Chemical Investigations.

In a lecture delivered by Dr. Voelcker, in May, 1868, at the rooms of the Royal Agricultural Society of England, we find reported some remarkable results of field experiments instituted at his instance, and especially interesting in regard to nitrogenous manures applied to clover, and the value of clover fallow as the best preparation for wheat. We submit them to the careful study of our readers, and commend them to their early attention:

Let me give you a brief account of some of the field experiments which have been carried on for a number of years, chiefly by former pupils of mine, who are now members of a club which may be called the field club of the Royal Agricultural College, at Cirencester. That is a club in the proceedings of which I take much interest; because, as I have intimated, it includes many of my former pupils, men who are rising in the agricultural world, and who are willing and qualified to make trustworthy and useful practical field experiments. Now I would refer especially to a series of experiments of clover seeds and on clover, some of the results of which were published in the last part of the *Journal of the Royal Agricultural Society of England*.

Without wearying you with many details, I would allude to a series of experiments carried out in the years 1867-68, at Escrick Park Home Farm, near York, by my friend and former colleague, Mr. Coleman. In all my field experiments, I may remark, the same manuring substances, or their mixtures, were employed in the several localities in which the experiments

were tried. They were the following: Nitrate of soda, sulphate of ammonia, mineral superphosphate, common salt, muriate of potash, sulphate of potash, and sulphate of lime. I am always careful to have two plots on which no manure is used.

In preceding years I tried these various substances upon heavy soils; one of the objects which I had especially in view being to ascertain under what circumstances the artificial supply of potash was attended with practical benefit to the farmer. Speaking generally, I may say, the result was not favorable to the artificial supply of potash on most of the heavy soils. In the majority of cases the increase of produce was not sufficiently striking to repay the greater portion of the outlay attending the purchase of potash manure; while in many instances I could see no beneficial effect whatever resulting from the application of potash manures to heavy land. Now, if we look at the chemical composition of clays of a better description we shall find that most of them abound in silicate of potash, and under the decomposing influence of atmospheric action they readily yield soluble potash. Indeed, in some of the experiments, the results of which I published some time back in the *Journal*, on the effect of water passing through the soil, it appeared that some kinds of liquid manure—very dilute, liquid manure, containing but little potash—in passing through clay soils, actually became charged with potash, the drainage waters possessing more potash than the liquid manure contained in its natural condition. This shows clearly that on certain clay soils the application of potash manure is not desirable. I here allude more especially to such soils as the excellent one—I use the word "excellent" in a purely chemical point of view—of Mr. Mechi's farm at Tiptree. Mr. Mechi had to deal with a very unproductive clay soil; but as it is full of mineral matters, he found the more he worked his land the better became his crops. In his case there was actually more potash removed from the land by passing the tank liquid through the soil than was contained in that liquid itself.

Here we have a ready explanation of the fact that in good clay soils an artificial supply of potash is not attended with any benefit to the person using it. I have, therefore, been anxious during the last year or two to try experiments mainly in light soils, and a capital opportunity was afforded for this purpose in the case of the extremely poor soil of the Home Farm, belonging to Lord Wenlock. I gave the analysis of this soil in the *Journal*. It there appeared that the soil contained as much as 91.8 (that is, nearly 92) per cent of quartz sand, an exceedingly small quantity of potash, a mere trace of phosphoric acid, and very little lime. That soil was ascertained to be poor in every description of mineral matter which is necessary to bring agricultural produce to perfection; but I had the gratification of finding that on such a soil the supply of the mineral food required for the clover crop is attended with the most beneficial results.

Incidentally I had occasion to make some observations with respect to the utility of nitro-

genous manures; and I believe that such manures will prove very useful to the practical farmer who has frequently to deal with a variety of soils, and ought, therefore, to be in a position to judge what description of manure is best suited to particular classes of soils.

Now, reverting to the experiments which were made at Esrick, I find that whilst common salt—that is, chloride of sodium—had no effect on the produce, muriate of potash—that is, the compound of chlorine with potassium—materially increased it. Soda is frequently a mere accidental constituent, which, in the form of chloride of sodium, indirectly tends to introduce food into the vegetable organism, but which, in its turn, is eliminated from the ripe produce. I find that chloride of sodium circulates in many plants, but that it does not enter into the chemical composition of the perfected seed of the plant. In perfectly ripe wheat you will find no chloride of sodium; in perfectly ripe beans and seeds, and many other plants, you find hardly any chloride of sodium; while this substance circulates very freely in the green plant, and is productive of very great advantage to the general condition of the vegetation. The case is, however, different as regards potash. Potash enters into actual union with many parts of plants, and it is absolutely necessary to bring the plant to perfection. To show you the difference between the physiological effects of potash and soda in this respect, I would just mention that, whereas you can wash out chloride of sodium with water from a substance like the root of the mangold, or the leaf of the beet-root, or the stalk of wheat, or from grasses, you cannot remove potash so as to show its presence simply by the mechanical process of washing; you cannot prove its existence before you have incinerated the plant, destroyed its organic structure, and thus re-obtained the potash in the ash. It has, in fact, entered into an organic combination, from which it cannot be removed by the mere mechanical process of washing.

On one of the experimental plots of the Esrick Park I used mineral superphosphate alone, and, to my astonishment, no effect whatever was produced by its application. This is an interesting result, seeming, as it does, to indicate that the great deficiency of potash, which is characteristic of the soil in that experimental field, entirely prevented the display of the usual functions which we know perfectly well superphosphate of lime discharges on land of a better character than that at Esrick. The superphosphate (or, rather, the phosphoric acid,) in that manure did not act, simply because potash was not present to form part of the substance of the clover plant. You can, I think, readily understand that. Place before a man all the dry food which tends to entice the appetite, and at the same time withhold from him drink, and you will find that he cannot assimilate the dry food. You may give him every description of dry food that can tempt him to eat, but if you keep from him any long time that unimportant substance,—as we are apt to consider it—though it is, in fact, a most essential thing—water, he will ultimately perish.

Potash is non-essential as regards many clay soils, because many clay soils contain abundance of potash; but it is most essential on poor sandy soils, because, generally speaking, these soils are very deficient in the necessary amount of potash which is required to bring clover crops, and I may also say root crops, to perfection. The mixture of potash, salts, and superphosphate yielded the largest weight of clover and rye grass, per acre, which was obtained on any of the experimental plots. Further, it was astonishing to notice that not only was the weight of the first cutting larger in the case of this particular plot than on any of the others, but the second cutting also yielded a much larger quantity.

Let me give you the actual figures as respects the produce on these particular plots. With no manure whatever, the soil yielded per acre of fresh clover 8 tons, 5 cwt., 40 lbs.; mineral phosphates alone gave 8 tons, 4 cwt., 12 lbs. Thus there was actually a rather smaller result; but then you must make allowance for variations of soil in the field, and avoid thinking too much of small differences of results. Practically speaking, the produce was the same in the case of the plot manured with superphosphate as that in the plot which had no manure. The extent of these plots was 1-20th of an acre in each case, but the yield is calculated at so much per acre.

Well, muriate of potash gave 9 tons, 16 cwt., 28 lbs., while the mixture of superphosphate and muriate of potash gave 13 tons, 15 cwt., 40 lbs., showing a great increase of produce above that of the unmanured portion of the field—that is, in the total amount of produce. This was distributed over two cuttings. The first cutting from mineral superphosphate and muriate of potash gave 9 tons; the second cutting nearly 5 tons; whereas the first cutting on the unmanured portion of the field gave 5 tons, 9 cwt., 72 lbs., and the second one only 2 tons, 15 cwt., 80 lbs. Thus you will observe that, although through the application of manure, a larger amount of produce was obtained, yet the agricultural condition of the land after the application of superphosphate and potash was better than it was when no manure whatever was applied. On the other hand, I find that nitrate of soda had an unmistakable tendency to exhaust the soil of both the plots in which it was used, the second cutting weighing less than that of the unmanured plot. It is true that the first cutting weighed rather more than that of the unmanured plot, but the second actually weighed less, showing clearly that nitrate of soda has an exhausting effect, which tells badly on poor land, and that this effect is produced rapidly.

From these experiments we may learn that nitrate of soda alone, or even in combination with superphosphate, should not be used as a top-dressing for artificial grasses on very poor sandy soils, not even with superphosphate, because it does not supply the needful alkali potash. Indeed, nitrate of soda, and, to a considerable extent at least, ammoniacal salts, are the worst manures that can be used on poor soils. They tend rapidly to the complete exhaustion of such soils, and do serious injury to the land,

while they do not even benefit the tenant-farmer who may apply them for a season with the view of obtaining a very large produce. On very poor sandy soils not only do purely nitrogenous manures rapidly exhaust the land, but the produce also becomes very inferior.

My friend Mr. Coleman was so much struck with the appearance of a particular field that he asked me to go down and inspect it. I did go down, and I must say that never in my life was I more struck with the aspect of a field which had been manured with these different fertilizing agents. On the land manured for clover with sulphate of ammonia and nitrate of soda there was not a plant of clover to be seen, and, quite contrary to my expectation, the true grasses, the Italian rye grass, etc., which should have been very luxuriant after the first cutting, were quite wanting. The land was, in fact, completely burnt up. I should have thought that the soil would stimulate the growth of Italian rye grass, and that a second crop would grow luxuriantly; but, contrary to my previous expectations, not even rye grass would grow—clearly showing that, although ammoniacal manures may be very useful for the production of grass and corn crops under many circumstances, yet they are not useful when there is an insufficient supply of mineral food in the land, and that the poorer the land is the more rapidly it becomes unproductive when salts of ammonia alone are applied, even as regards those plants which in the ordinary course of farming are decidedly benefited by the use of ammoniacal salts or nitrate of soda. In fact, the application of nitrogenous manures in this case evidently tended to the complete exhaustion of the land.

On the other hand, I was struck with the remarkable effects which potash, applied in conjunction with phosphatic manures, produced upon the clover plant. You could see to a line where the potash and superphosphate had been used. There the clover plant was growing luxuriantly and healthy, and keeping in check the Italian rye grass with which it had been sown.

So much, then, with regard to these experiments. I will not detain you by referring to similar experiments which were made last season. I will only observe that they fully confirm the results of the experiments of the preceding season, and at the same time show that in very dry seasons it is most desirable to apply saline manures sparingly, and also to apply them early in the spring.

Allow me to impress upon you, that when you apply top-dressings to pasture, or to artificial grasses, or to cereal crops—wheat, oats, or even barley—you should apply them early in the spring, in order that the manure may have a chance of getting thoroughly distributed through the soil by being washed into it. I tried similar experiments on clover—a mixture of clover seeds of different kinds being sown without rye grass or any other grass seeds. The experiments in that case were undertaken by Mr. Kimber, (a former pupil of mine,) on land which was naturally rather poor, but which had been done extremely well. The clover was sown in the preceding year with a barley crop coming

after a good crop of swedes, being well manured with dung and drilled in with three hundred weight per acre of superphosphate of lime, and fed off by sheep. In consequence of the applications of good dressings of farm-yard manure, of the artificials used for the turnip crop, and of the feeding off the swedes by sheep, with corn being given to them at the same time, the soil seems to have been in excellent agricultural condition.

Neither nitrate of soda nor sulphate of ammonia produced any effect on the clover; and that appears to indicate either that the land must have been in an excellent agricultural condition, as I believe it was, or that the clover plant is not benefited by nitrogenous manures. On this latter point we have no conclusive evidence. I have been extremely anxious to ascertain under what circumstances, if any, ammoniacal salts, or nitrogenous organic substances, or nitrates, benefit the leguminous tribes of plants. Some years ago I made some experiments which seemed to indicate that nitrogenous manures have no beneficial effect on the clover tribes, and probably none either on other leguminous plants.

At any rate, I could never see where sulphate of ammonia had been applied to clover, nor could I notice any beneficial result from the application of ammoniacal salts to peas and beans; whereas I could perceive minutely the effects of nitrogenous manures when they had been applied to wheat or barley, or any of the graminaceous family of plants. I was anxious, therefore, to ascertain whether nitrogenous manures have any effect on clover. In the experiments which were conducted by Mr. Kimber, at Tabney Warren, near Abingdon, the nitrate of soda and the sulphate of ammonia had no beneficial effect whatever on the clover.

(TO BE CONTINUED.)

From the New England Farmer.

Clover.

CLOVER is a great institution, the value of which is not as fully understood as it should be. The field for its development in the prairies of the West, where the fertility of the soil is annually depreciating for want of manurial matter to supply the drain that is made upon it.

When there is but little stock in proportion to the number of acres cultivated, and that little is not stabled in the winter, a large amount of manure cannot be saved to enrich the broad fields of corn and wheat. What shall be done? Two-thirds of the fertility, so far as wheat is concerned, is lost already. Soils that a few years since yielded thirty-three bushels now yield eleven. The remedy is forthcoming just when it is wanted, and experience is teaching how to use it. It is wonderful how Nature keeps her treasures stored up until the necessities of man compel him to seek for them. Coal has been buried in the bosom of the earth until man wants it to convert water into steam, and iron ore into rails and ships, and now he finds cropping out all over the earth.

The fertility accumulated in the virgin soil has sufficed for one generation, and now the

little brown clover seed has been given to furnish machinery by which the elements of fertility may be absorbed from the atmosphere, and pumped out of the earth to supply the wants of another generation. On most lands four or five pounds of clover seeds and two or three hundred pounds of plaster to an acre, will in a little more than a year, if the soil is tolerably good, be converted into two tons of the very best hay. This material has been chiefly derived from the atmosphere by the plants which have the power of changing carbon and oxygen into solid matter in their stems and leaves. This they deposit in the soil when they have completed their growth and fall and decay, and thus fertilizing matter is drawn from the atmosphere by the ton, annually, and placed just where it is wanted for the next crop.

And the clover roots—yes, the clover roots—what have they been doing all this time? If not interrupted, they work on two years, and then withdraw from the field and make room for other workers who succeed them. We call them biennials, indicating that they take two year's jobs. But what an amount of work they do in this short time. They will push themselves into the soil, one, two, three, four, five feet, burrowing into and loosening it, pumping up water from it, and the various minerals held in solution, and depositing them in the stems of the plants along with the materials drawn from the atmosphere, and thus we have a compost of silex, lime, potash, soda, magnesia, alum, iron, and the rest, mixed with carbon, oxygen, nitrogen, etc., as food for the next crop. These clover roots are grand workers. They are no idlers. They do not stop when they have worked eight hours. When one of these little fellows finds a particle of lime or sulphur away down three or four feet underground, he seizes it as his lawful prey—indeed it is the very thing he went down after, and has been hunting after all summer,—and now he sucks it into his open mouth, and pulls and tugs like a boa constrictor swallowing a goat, until he gets it within his œsophagus, then he pushes it on and on through the four or five feet of his longitude, and deposits it in the stem of the plant, to be used where it is wanted in the process of construction. We should like to see all the roots from an acre of thrifty clover washed and shook out, dried and thrown into a heap. Would there be two tons of them—as much as there is of the plants above ground? If so, these four or five pounds of seed would have drawn from the air and the ground four tons of solid matter, ready to be rotted down into plant food for the crops that are to follow.

Not only has this amount of manurial matter been prepared, but the soil has been bored and loosened in all directions, so that the air could penetrate it, and warm it, and act upon the mineral matter it contains. This soil is then in a very different condition from what it was when the clover seed was sown. Its mechanical condition is greatly changed. The rain can penetrate it. The roots of wheat can run down into it. The decaying vegetable matter upon the surface, as it dissolves by the rain, can accom-

pany the roots into the earth, and yield up to them the nourishment it contains.

If the soil is too poor or too much exhausted to yield a full crop of clover at the first sowing, plow it into the ground and repeat the process. The crop will be increased and the soil improved by every repetition—until at length you will get the thirty bushels of wheat.

But we are impatient. We want to get the thirty bushels in one year. We cannot wait. But Providence is patient. "The mills of the gods grind slow." We must wait. Guano at \$60 a ton, and then transported a thousand miles won't pay, and if it would pay one year it will leave the land in a worse condition than it found it. We must make the manure on the soil where it is to be used. We can get labor when we cannot get manure. We must put as much labor on ten acres as we now put on twenty, and we shall get more wheat and more corn, and improve the soil instead of exhausting it. We must raise clover.

Going Back to the Dung Heap.

At the Kingscote Farmers' Club in England Mr. Hayward, a white-headed farmer, read a valuable paper on yard manures. He has little faith in phosphates, sold in bags, and thinks that the stress of farm economy should be in making and saving all the manure that can be made and saved on the place. Describing the ways in which manure are wasted, he takes up the most desirable method of preparing and preserving farm-yard manure. This greatly depends upon the proper construction of the dung heap and the condition of the materials of which it is composed, which materials no doubt most practical men know as well as myself. In heaping manure (unless intended for immediate use) the carts should always be drawn over it, and be constructed upon an inclined plane, on either side, so that horses could draw up on one side and down on the other, as the more it is trodden down by horses and wheels by its being drawn up load upon load the better; it will rot quite rapidly enough when so compressed, and there will be very little loss by the dissipation of gases from over-heating, even if it should be required to remain for a long time; and once well turned about a fortnight before using will generally be sufficient to produce the proper consistency for plowing in.

Mr. Lawrence, of Cirencester, says of the plan which he has adopted: "Some three or more spots are selected, according to the size of the farm, in convenient positions for access to the land under tillage, and by the side of the farm-roads. The sites fixed upon are then excavated about two feet under the surrounding surface. In the bottom there is laid some three or four inches of earth to absorb any moisture, and upon this the manure is emptied from the carts. This is evenly spread and well trodden as the heap is forming. As soon as this is about a foot above the ground level, to allow for sinking, the heap is gradually gathered in until it is completed in the form of an ordinary steep roof, slightly rounded at the top by the final treading. In the course of building this up

about a bushel of salt to two cart loads of dung is sprinkled among it. The base laid out at any time should not exceed that required by the manure ready for the completion of the heap as far as it goes; and within a day or two after such portion is built up, and it has settled into shape, a thin coat of earth in a moist state is plastered entirely over the surface. Under these circumstances decomposition does not take place in consequence of the exclusion of the air, or, at any rate, it is to so limited an extent that the ammonia is absorbed by the earth; for there is not a trace of it perceptible about the heap, though when put together without such covering this is perceptible enough to leeward at one hundred yard's distance. The base may be ten to twelve feet wide, and the roof about nine feet from the base, which settles down to seven feet."

I think, instead of three or four inches of mold laid in the bottom, Mr. Lawrence's plan might be improved upon by having a foot to fifteen inches, and a covering of ten to twelve inches over a level surface, when the heap is about four feet high, would answer quite as well as gathering in the top to form a roof, if the mass be well consolidated by the pressure of horses and carts.

There is another kind of manuring that it may not be out of place shortly to allude to, which I have seen practiced, with very good results, in some parts of the country, though not often adopted in this neighborhood. I mean green-manuring, or plowing in green crops, such as vetches, mustard, and clover. The value of green crops so applied is great, and I can bear practical testimony, upon ample experience, of its being most efficient.

I should be very sorry for it to be inferred from any remarks that I have made that I wish to depreciate the importance of the use of artificial manures, especially guano, bones, blood, etc. But I am of opinion that a vast amount of rubbish is manufactured now-a-days. It may have the effect of exciting the soil to produce a crop of roots—though I have no faith in it with regard to white straw crops—and it may be an advantage for the time being. But the important question is, how long land will answer the whip to this treatment? We know that land will get sick of certain crops if repeated too frequently, and it strikes me rather forcibly that the time will come, and in some instances may have already arrived, of land being artificially manure sick; and I hope this evening to hear from those who have been using light manures for some years whether they do not find that a more liberal dressing is required now to produce the same result than when first applied. If so it is to be feared that the soil must be deteriorating rather than improving. I have alluded to artificial manures only for the purpose of proving the importance of paying greater attention to the preparation and preservation of that manufactured in farm-yards and stalls, of which there is no danger of land ever getting sick.

I will conclude by quoting, as nearly as my recollection serves me, the words of some one speaking upon the subject which I have intro-

duced for this evening's discussion at an agricultural meeting in Ireland, and which came under my notice two or three years ago: "It is by the preparation and application of manures that good crops *can* and *will* be produced, and just in proportion as it is largely applied so will the farmer be enriched. If you want a large crop of turnips, prepare manure and apply it; if you want abundant crops of flax, prepare manure and apply it; if you want large potatoes, manure; if you want plenty of oats, manure; in a word, if you want plenty of money, I would say, prepare manure *properly*, and apply it."

Potash as an Ingredient of Manures.

PROF. MALLETT, of the University of Virginia, has written an article on the subject of potash, which we copy from the *Planter and Farmer*, as follows:

Interest is being rapidly excited on this side of the Atlantic with regard to the action of potash to mixed manures, as is already practiced in Europe on a great scale and with excellent results, advantage being taken of the vast deposits of mineral potash discovered a few years ago to the south of Magdeburg, in Prussia Saxony.

That benefit is to be expected from the application of potash as a fertilizer is fully shown by a glance at any good list of analyses of the mineral matter removed from the soil by our commonly cultivated plants—

Thus we find, in round numbers, in the ash of

Wheat.....(grain).....	31	per cent of potash
Barley..... ".....	22	" "
Oats..... ".....	16	" "
Buckwheat..... ".....	23	" "
Indian corn..... ".....	27	" "
Rice..... ".....	18	" "
Peas.....(seed).....	40	" "
Beans..... ".....	40	" "
Garden turnips.....(roots).....	39	" "
Swedish ".....	51	" "
Beets..... ".....	53	" "
Potatoes.....(tubers).....	60	" "
Cabbage.....(leaves).....	49	" "
Apple.....(fruit).....	36	" "
Cherry..... ".....	62	" "
Sugar-cane.....(stems).....	13	" "
Red clover..... ".....	35	" "
Timothy..... ".....	29	" "
Meadow hay..... ".....	26	" "
Grass in early stage.....	69	" "
Cotton..... (fibre).....	42	" "
Tobacco..... ".....	27	" "

The well-known great fertility of the soil on the slopes of many volcanoes, as Etna, Vesuvius, etc., when resting upon and derived from volcanic rocks easily decomposed and rich in potash, also affords illustration of the value of this material to plants, and yet further evidence of the same kind has fallen under the notice of every one who has watched the effect of wood ashes strewn over land, or has marked the difference in the yield of a freshly cleared or burnt over piece of ground, and of one long in cultivation.

Indeed, there has been a pretty general admission on all hands of the importance of this alkali in its relations to plant life.

Yet scarcely any substance known to possess

fertilizing power has, until lately, been used so sparingly or so rarely.

Lime, sulphuric acid, phosphoric acid, and ammonia have been and are still used in immense amount, and in forms derived from a very large number of sources. Peruvian guano gives us ammonia, phosphoric acid and lime; raw bone and fish guano afford the same substances in other proportions; the host of "phosphatic guanos" (Nevass, Redonda, Sombrero, and the like,) give us phosphoric acid and lime; land plaster consists of sulphuric acid and lime; the manufactured "superphosphates" yield phosphoric acid, lime, and sulphuric acid; and lime is abundantly presented to us as burnt lime, marine shell, calcareous marl, tufa, etc. Magnesia, also a constant constituent of plants, has been, like potash, a good deal neglected, though coming in incidentally with lime in several of its forms.

Except as wood ashes, and in this condition but sparingly, potash can hardly be said, until lately, to have been included in the list of fertilizing materials, though it occurs, and in relatively good proportion, in the article of that most valuable of all fertilizers, properly-saved stable manure.

The obvious reason has been that the commercial price of potash was too high—it was practically unattainable upon a scale commensurate with the demands of the world.

The discovery of very large beds of mineral salts of potash over-lying rock salt, at Stassfurt, in Prussia, has greatly changed this state of affairs, and now, after but a few years of working these deposits, potash, though still a valuable substance, has become accessible to the farmer as well as the manufacturer on a much larger scale, and at much reduced prices.

The leading idea to be borne in mind is that these potash salts are not of themselves all-sufficient and independent manures—are not rivals of bone dust, plaster, lime, or fertilizers yielding ammonia—but are simply most valuable additions to these, supplying that which they do not contain and cannot be made to yield.

JOSH BILLINGS was asked, "How fast does sound travel?" and his opinion is that it depends a good deal upon the noise you are talking about. The sound of a dinner horn, for instance, travels half a mile in a second, while an invitation to get up in the morning I have known to be 8 quarters up an hour goin up 2 pair of stairs, and then not have strength left to be heard.

A CORRESPONDENT of the *English Journal of Horticulture* says that he has never found any covering for small seed equal to short grass mown from the lawn. This is strewn over the seeds to about half an inch in depth, and then the usual watering is given. It soon shrivels and becomes light, so that the plants come through it freely. The birds never attack them and the crops never fail.

WHEN the good man dies, the tears are shed which he in life prevented from flowing.

Strawberry Culture.

At a recent meeting of the American Institute Farmers' Club, Mr. Henry T. Williams, editor of the *Horticulturist*, made the following valuable remarks on Strawberry culture, which we extract from the report of the New York *Weekly Tribune*, as applicable to this section, with the exception of the advice as to the *time of planting*. While in the greater part of the Northern States, owing to the severity of the winters, we have no doubt that Mr. Williams is correct in recommending spring planting, we much prefer fall planting in our section.

We have been very successful in the culture of strawberries, and we have always found that beds planted in September and October do better than those planted later in the fall or in the spring. From an October planting we have gathered a good crop in the following season. In all other respects, we fully endorse from experience Mr. Williams' advice, and especially his preference of the Wilson's Albany above all other kinds. Next to the Wilson we have been most successful with the *Triomphe de Gand*:

No village garden or farmer's home grounds are now considered complete without the delicious strawberry. It brings health to many an enfeebled frame, quickens the physical energies, stays the hands of merciless disease or death, fills the household with delight, adds pleasure to the city lover, while to hundreds of anxious cultivators it proves often a Godsend in their efforts for a livelihood. Let us look for a few moments at some simple practical facts in their cultivation and management.

SOIL.—Almost any good garden soil will grow strawberries, but it must be well drained, warm, and not overrun with weeds or grass. A cold or wet situation will surely cause failure. It is useless to expect large crops of berries on light lands. In all soils deficient in vegetable matter the strawberry will never attain a rank permanent growth. A shovelful of manure must be applied to every hill, which will support the plant for one or two seasons, after which other stimulants must be given to keep it up. On such poor lands, I think it best to grow nothing the first year; simply sow the fields over with clover or buckwheat, then plow it in and continue the same process for one or two years, by which time the land will have some strength of its own to give to the plants growing upon it. Even then the manure must not be omitted. On good strong heavy or clay lands the strawberry will thrive and produce immense crops. It is on such lands only that strawberry culture can be really made a steady profitable occupation.

MANURES.—The strawberry is one of the most exhausting crops ever cultivated. Its roots search every available inch of the soil within a foot of the surface, and unless liberal applications of manure are given yearly, the ground becomes impoverished. Some soils are already

in so good heart that no stimulative is needed. Many of Mr. Knox's fine berries have been grown on land five years which has been manured but *once*, and that moderately. But he stirs his land deep and keeps his plants in hills. On the other hand, our friend Dr. Hexamer finds it necessary to spread from fifty to one hundred loads of manure per acre every three years and keep it up steadily. The best method of applying manure on strong soils is broadcast, the fall before planting, on light lands directly in the hill, and in the winter mulch with coarse manure also. Next to barn-yard manure, the very best of all applications, but sometimes too full of weeds, or so adulterated by stable-men as to contain but ten per cent of the "simon pure" article and ninety per cent straw and hay seed, I esteem prepared muck composed of swamp muck composted with lime and fermented during the hot months of summer, or worked over during the frosty days of early winter. Plow a furrow where the plants are to be set, and scatter the muck thickly along the row, then put the plants directly upon the top of it, and it will not fail to take good hold. Next to this is pure bone-meal. For the past two years I have relied on bone meal entirely. Superphosphates are not to be trusted, but the former, selling for \$10 a ton less, has been worth fully 100 per cent more, and always excellent for all descriptions of fruit. This I apply in quantities of 1,000 pounds to the acre, scattering immediately over the plant just before a rain, or in a moist, cloudy day. The best time of year is about the first of August. The plants are then recuperating from the last spring's crops, and forming new fruit sets for the coming spring. The bone meal supplies an agreeable nutriment without excessive stimulation. Special fertilizers and solutions are sometimes used in gathering. Liquid manure is always good. A pound of potash dissolved in a barrel of water will cause the plants to throw out an immense number of runners. A pound of sulphate of ammonia, dissolved in a barrel of water, will cause the plants to produce an immense amount of fruit, but has a tendency to cause them to mature very late. In the spring time a light sprinkle of guano, say 300 pounds per acre, broadcast, may prove a great help; but in general I think it always bad policy to force plants forward. There is sure to be a reaction some time, and nothing is so desirable as a good preparation beforehand, and then a steady, onward growth, every plant of the plant becoming well matured and able to bear heavy crops without strain. The phosphatic manures are the best fertilizers for all kinds of fruit.

PLANTS.—A great drawback in successful strawberry culture is in poor plants. I have no doubt the failure of many a cultivator dates back to the time when he preferred to get his plants of a cheap dealer at three or four dollars a thousand rather than from one who had a good reputation and a pride in sending out superior stock, well rooted. In nearly every case this cheap stock proves completely worthless; either the varieties are all mixed, or the plants are small and feeble, or they are thrown carelessly into barrels, without careful packing, and

arrive at their destination a conglomerate mass, injured, heated, and decaying. Even if the living ones are planted out, they soon die in spite of the most persistent efforts to keep them alive, and at the end of the season those which remain have cost precisely as much as those obtained from a higher-priced dealer. I really think good strawberry plants cannot be properly grown to respectable size, dug, handled, packed, and safely shipped, at less than \$8 per 1000. A thousand good plants, well planted and established, will give the grower, with their runners, a better stock for his bed or plantation than 3000 obtained at a cheap rate. Every time I have purchased cheap stock I have lost money, and it is well for all beginners to avoid it if they would be successful. They must undertake less work, but do it more thoroughly.

PLANTING.—In the latitude of New York, and northward, the spring is the only favorable season for planting. The plants will have the advantage of the spring rains, get well started, grow finely, and produce a good crop the succeeding spring. Fall planting in this climate is more often a failure, the plants not often living through the winter, nor having any crop the next season. But south of here, say below Philadelphia, fall planting is quite successful, and average crops are obtained the next spring. I want to call special attention to two important particulars. First—Never heel your strawberry plants, nor buy from nursery-men plants that have been heeled over winter. I have always found them a failure. Second—In packing or unpacking your plants, always keep the roots away from the light of the sun. Select a cloudy or wet day for planting. If possible, just before a rain, or just at night-fall. It is well also to shade the plants a little until they get fairly started. I received once two sets of plants from a dealer. The first were taken up in the spring from the nursery, and planted out in a field just before a rain. They have proved a splendid success. The second lot had been heeled during the winter, and were not planted until after the rain. They never did well, and I have plowed them up. The loss to me has been fully \$200.

DISTANCES.—Varieties differ greatly in their treatment. Some do best in beds, some in rows, some in hills, some running all over the ground. Some should be plowed under after their first crop, others after the second, but I prefer the following two systems for varieties named hereafter: First—For family use, put in rows two feet apart and plants one foot in the rows, making a bed about fifteen feet wide and from twenty-five to one hundred feet long; one hundred good strawberry plants will just fill a bed ten by twenty feet, and if well treated will supply a family every day as long as the variety lasts. If the bed is extended one hundred feet and filled with early, medium, and late varieties, the family can enjoy a continual feast for two months. The whole need not cost \$20, and never could be money better expended. Second—For market, I prefer to grow in hills eighteen inches apart, and rows two and a half feet apart. I think it a decided injury to put plants too closely together. Their roots need

considerable space to ramble round in, and I am satisfied the more room we give our plants the stronger will be our stools and the greater the productiveness. An acre of plants in hills two feet apart will yield twice as much as one where the plants are a foot apart, manure and cultivation being the same. The Wilson is a variety sure to bear under any sort of treatment, but the Jucunda and Triomphe de Gand, and in general all first-class choice varieties must be grown in hills and kept well trimmed.

CULTIVATION.—Keep the cultivator stirring every week during the first year. Keep down the weeds and grass or you will lose your berries; clip off the runners constantly. The effect of this practice is wonderful, the plants having now no interference from weeds, nor runners to support, make a fine growth, form large shoots, and are able to mature large quantities of fine berries. Strawberries must not be left to take care of themselves. Every fall, just as the ground freezes, cover the field completely with mulch. This consists simply of salt, hay, straw, leaves, or chopped cornstalks. I consider this the most important of all points in the culture of berries. It prevents the plants from being injured by the winter weather, it protects the soil from scorching sun in the time of drouth, it often doubles the crop of fruit by supplying moisture and coolness to the roots of the plants, while it also keeps the fruit from contact with the earth, and assists in rapid ripening and fine coloring. Plantations that are mulched regularly never send any sandy or gritty berries to market. It will pay any man to apply \$25 to \$50 worth for every acre in cultivation. Salt is the best, wherever obtainable, and will last two seasons. About ten loads to the acre will be needed. There is another point in fancy strawberry culture not generally known, and perhaps may not be believed. After a hill of berries has borne for one or two seasons it is well to cut off the old leaves and fruit stalks, and permit a new top entirely to form. The effect is sometimes wonderful in the next crop, which is often the finest ever produced. A neighbor, whose patch of Wilsons had borne for three years and was very full of weeds, looking pretty well "played out," after fruiting time permitted the runners to run freely over the ground, and also the weeds and grass to grow in abundance for two months. Then taking down his scythe, he went into the field and mowed everything from beginning to end. He supposed the plants would die out, and in their place next spring there would be a good patch of grass. To his astonishment, next spring he had the largest and finest berries, as well as the most prodigious crop, ever known. This practice is a common one among many English gardeners, whose fruit grounds are celebrated for the beauty, excellence, and productiveness of the fruit. It is a practice we cannot yet recommend here for general trial, until we know a little more about the best time and best manner to do it, but the theory is very plain. It relieves the plant of the incubus of its old leaves and fruit stalks, now nearly exhausted, and while the roots are still in full vigor, it forms new tops and sets for the coming

year. It seems to be a very reasonable and proper practice, as much so as the pruning of trees and shrubs.

THE APIARY.

SEPTEMBER.

BEEES now find scanty pasturage, except in sections where golden-rod and other late flowers abound. Should any young swarm be deficient in bee-bread, exchange a comb or two with an old stock that has an excess.

If the lower part of such combs are empty, they may be placed near the centre of the needy stocks, as there should be honey directly above the bees; but if full, place them a little to one side of the cluster, for the reason that the bees need empty cells to winter in. The comb in each frame should have an inch hole cut through it, four or five inches from the top, to enable the bees, in extreme cold weather, to reach the stores in the outside combs without danger of freezing, by leaving the cluster to crawl around the edge of the frame.

If a colony retain its drones long after those of other stocks are destroyed it will almost invariably be found queenless. Graduate the entrances of weak stocks, and be careful about exposing refuse honey or other sweets to demoralize the bees.

For the Southern Farm and Home.

Cotton vs. Corn—A Peep at the Other Side.

Mr. Editor: It is well sometimes to examine the foundation even of what are termed truisms, but a popular error might be perpetuated for the lack of proper investigation. "Less cotton and more corn" is in everybody's mouth, until some seem to doubt the policy of planting any cotton at all. Indeed, we heard a citizen, who aspired to be a councilman of one of our largest cities, contend that cotton was a curse, the country was impoverished by it, and its cultivation should be abandoned. He was estopped, however, in the timely remarks of a bystander, that without cotton his own business would soon go down and grass grow in the streets of his renowned city.

So strong has this anti-cotton feeling become that some have proposed to invoke the strong arm of the law, and others to form agricultural rings, binding every member to plant but a small quantity of this terrible weed, lest utter ruin fall upon the country. But what if these rings should become universal, and every farmer in the South agree to plant only one-third of his land in cotton, would it not result like the demand of the priest on his parishoners, for each of them to bring a bottle of wine and pour it in a barrel for sacramental purposes? As every one brought water, there was no wine in the barrel, so we think such a combination

would produce the biggest crop of cotton ever made. The best land would be selected, the best fertilizers used in large quantities, and the best cultivation possible given; while the corn, on small acres, poor land, and bad cultivation, would be left out in the cold.

We are among those, (very few in number, however,) who are willing to leave this question to be settled by the great law of supply and demand. For, while the people think that the chances are favorable for them to make more money by planting more cotton and less corn they will do it, despite the *ex parte* figures of newspaper correspondents, (*vide* E. Hatcher in *last FARM AND HOME*), and the diatribes of learned editors. While the demand of the world is so great as to give good prices, farmers will make cotton and run the risk of having to buy corn from the great West. If they can buy it cheaper than they can make it, what harm is done? If it costs them more, they are the greatest sufferers. Let them plant it then until they are convinced that it is bad policy. Until this thing happens, you had as well try to dam up the Mississippi river as to stop them from its production.

But then, planting so much cotton is a selfish policy, and the country is impoverished by it. True, there is selfishness in it, and so of all human policies. Is the anti-cotton plan less chargeable with the spirit of selfishness? You say, let us make half the cotton and twice as much corn, and we will have as much money and more bread. Admitting its truth, would you, for the sake of putting twice as much money in your pocket, take from the poor of the world one-half of their clothing, causing cotton fabrics to rise to such a price as would debar many of them from muslins and calicoes, and even the common homespun? What would you think of Cuba and Louisiana if they were to combine and only make half the supply of sugar, thereby doubling the price and depriving the poor of that great luxury? And so of the wheat and coffee producing countries? Would you not say at once, these men are violating the laws of God, and are unworthy the heritage he has given them? Do the cotton planters constitute a more privileged class than the sugar planters or the wheat growers? Are we better than they? Shall we curtail commerce, stint the world in its clothing, and cause our own people to pay double the price for cotton fabrics, because we refuse to produce what God has given us the means to do? Can we do this and not injure ourselves as well as the rest of

mankind? We certainly cannot, for duty and interest are beautifully blended together in this as in all the other departments of life.

Let us examine a little more closely the policy of planting for only a half crop of cotton. Two bushels of cotton seed applied as a fertilizer to corn will cause our lands to produce one bushel more than the natural soil. These two bushels of cotton seed is worth a bushel of corn. Allowing that a crop of four millions of bales of cotton will only bring as much money as two millions, (which is not true,) the South will have besides 71,428,571 bushels of cotton seed, which, properly husbanded and applied as a fertilizer, is equal to 35,714,285 bushels of corn or its equivalent in wheat or oats. Besides this, every yard of calico, muslin, homespun, and other cotton fabrics purchased at the South, (not to say elsewhere,) will be cheaper by half to its people, and thus save millions more. The half crop would stop many mills, throw out of employment many operatives, and cause much distress among the poor of other lands. The full crop would not only increase the mills and operatives, and thereby add to the sustenance and happiness of many poor people, but would largely increase the consumption of cotton, and enhance its comparative value. A stinted supply would stimulate its production in other countries, as was evidenced by the late war, while repeated full crops would drive from competition all countries that could not afford to make it at low rates.

It is true that our farmers can raise a certain amount of meat and corn cheaper than they can buy from the West. It is to their interest to do this, and then raise as much cotton as they can besides. Beyond this they should not go. No man has a right to try to make a planter raise a bushel of corn when he can buy it, by planting cotton cheaper than he can raise it. The truth is, cotton is our great staple and our wealth. The more we make of it the wealthier we are. Without it we are the poorest civilized people on earth. If that man was considered a great blessing to his race who taught how to raise two blades of grass where only one grew before, he is no less worthy of praise who teaches how to make two bolls of cotton where only one appeared before. For, while the one has doubled the amount of provender for the ox that treadeth out the corn, the other has added twofold to the production of that beneficent fabric which clothes the teeming millions of earth.

E. M. PENDLETON.

Sparta, August 5th, 1870.

For the Southern Farm and Home.

Spin your Own Cotton.

Forty years ago it would have been deemed absurd if any one had predicted that almost every planter would have to-day his own gin power and packing screw to gin and pack his crop. In those days of *wagoning*, crops were hauled to town and sold *in the seed*. Now, except in those cases where amendment-clad fellow-citizens confuse the rights of property and sell seed cotton which never belonged to them, no seed cotton is sold. It is all ginned. The saving in transportation, and the increased facilities of transportation, are among the strongest evidence of the mechanical progress of our time.

Why, Mr. Editor, may we not go a step further, attach spinning machinery to our gin power, and send our cotton to market in the shape of thread? It would cost no more to ship a bale of yarn weighing four hundred and fifty or five hundred pounds, and worth $\frac{\text{per}}{\text{pound}}$, than it would to ship a bale of cotton of similar weight, worth $\frac{\text{per}}{\text{pound}}$. In addition to this, all the waste and loss attendant on the transportation and handling of cotton would be saved, and thus fully ten per cent would be added to the value.

I wish somebody who is well acquainted with the manufacture of cotton would publish in the *FARM AND HOME* the cost per thousand pounds of spinning into yarn of the average numbers; what amount of thread of those numbers one thousand bales would yield, and the cost of the necessary machinery.

I firmly believe that we can all spin our crops into yarn, dispense with the obliging but very costly services of the long line of middlemen who stand between our cotton bales and the spinning machines, each taking a pluck at the bales, and putting what he plucks in his own pocket. I believe we can add fifty per cent to our present receipts, and that the art of spinning, which interested manufacturers represent as so difficult of attainment, can be learned with very little effort. To be sure we must attend to it ourselves, and not trust it altogether, as we do many other things, to a colored foreman. But this is no objection. If we trust to negro management, we had better lock up or sell our new plows and subsoilers, abandon the use of fertilizers, set our faces against all labor-saving machinery, and be content with the old scratching, shiftless, hickledy-pickledy system which has reduced to barrenness many a thousand acres of once fertile land.

Get information, Mr. Editor, on the subject of this communication. Publish it for the benefit of your readers, and if there is as much in it as I honestly believe there is, I shall be immensely rewarded for having started the investigation.

SPINNING-JENNY.

For the Southern Farm and Home.

Lucerne.

I HEARTILY approve your persistent efforts, Mr. Editor, to induce our people to raise their own corn, fodder, and provisions, and especially to become independent of Northern hay at \$2 50 per hundred weight at the nearest depot. You have not, however, given the prominence to Lucerne as a forage crop, which I think it deserves. I regard it as more valuable than any of the grasses. I have had considerable experience in its culture, and I regard it as unsurpassed in value for soil-feeding cattle and for hay. No other forage crop is so productive. Five crops a year for six or seven years may be counted on with certainty with proper culture and liberal manuring. Its product is double that of clover. It does not salivate stock, as the second crop of clover generally does. It is the best food possible for milk cows in increasing the quantity and quality of the milk, and for hogs, colts and calves I have found it superior to any other green food.

Good corn land *well limed* is the best for Lucerne. It should be sown in the last of September or October, so as to allow the young plants to become well rooted before frost, and should be sown, I think, in drills from twenty to thirty inches apart, at the rate of ten pounds of seed per acre.

But to succeed with lucerne, deep and thorough culture is absolutely essential. The ground should be broken fully fourteen inches deep, and pulverized as fine as the mould of a garden, by rolling and harrowing. Manuring can hardly be too liberal. Liberality in this direction is the best economy.

Sow in October in drills, keep the rows quite clear of grass and weeds, and stir the soil occasionally with a coulter or narrow scooter plow. Cut it when the flower appears; and cure as you would clover. Reliable seedmen will supply seed at about twenty-five cents per pound.

Lucerne must never be eaten off by stock. It must be always cut.

I offer these hints—the result of long experience—to aid you in the good work of helping our people to maintain themselves, and thus become independent.

B. W.

Near Wetumpka, Ala., Aug., 1870.

The Death Bed.

O'er the bosom of the river
Where the sun unloosed his quiver.
Where the star-light streamed forever,
Sailed a vessel light and free.
Morning dew-drops hung like manna
On the bright folds of her banner.
While the zephyrs rose to fan her
Softly to the radiant sea.

At her prow a pilot beaming
In the flush of youth stood dreaming.
And he was in glorious seeming,
Like an angel from above:
Through his hair the breezes sported,
As on the wave he floated
Oft that pilot angel-throated
Warbled lays of hope and love.

Through those locks so brightly flowing,
Buds of laurel bloom were blowing,
And his hands anon were throwing
Music from a lyre of gold.
Swiftly down the stream he glided,
Softly the purple waves divided,
And a rainbow arch abided
On his canvas' snowy fold.

Anxious hearts with fond devotion
Watched him sailing to the ocean,
Praying that no wild commotion
'Midst the elements might rise.
And he seemed some young Apollo,
Charming summer winds to follow,
While the water-flag's corolla
Trembled to his music sighs.

But these purple waves enchanted
Rolled beside a city haunted
By an awful spell that daunted
Every comer to her shore.
Night shades rank the air encumbered,
And pale marble statues numbered
Forms that long in death had slumbered,
And awoke to life no more.

Then there rushed with lightning quickness
O'er his face a mortal sickness,
And the dews in fearful thickness
Gathered o'er his temples fair.
And there swept a dying murmur
Through the lovely Southern summer
As the beauteous pilot came
Perished by that city there.

Still rolls on that radiant river,
And the sun unbids his quiver,
And the star-light streams forever
On its bosom as before.
But that vessel's rainbow banner
Greets no more the gay savanna,
And that pilot's lute drops manna
On the purple waves no more.

NEW PEACH.—A new seedling peach is announced, called the "Laurenel," in Monroe, Ohio. It is said to be about the size of Hale's Early, a week or more earlier ripening, much finer flavor, does not rot on the tree, etc.

Horticultural Department.

The Vegetable Garden.

We hope that the directions for planting a Winter Garden, which were given in our last number, have been heeded, and that the common excuse, "We have not had time," has not been allowed to prevent any of our friends from securing so valuable an addition to their comfort.

Should this month be showery, many seeds may be sown. Turnips, Radishes, Lettuce, Spinach, Mustard, and Beets should be planted during the early part of the month, and the seed of Early York, and other early varieties of cabbage seed, should be sown in a rich bed to produce plants for planting out when spring opens; or, if large enough in November, they may be planted out then, provided they are protected from the severe frosts of winter. If the seasons prove favorable corn for late roasting ears may still be planted, and even English peas and snap beans, if well mulched, may be successfully grown if planted at once.

Be careful not to allow weeds or grass to shed their seed. Turn under all vegetable matter that will decompose by spring. Extirpate all weeds like purslane, one root of which, now full of seeds, will give incalculable labor in the spring.

The ravages of the cabbage worm and turnip fly may be successfully arrested or totally prevented by sprinkling ashes or plaster upon the plants, and it is said that a little salt dusted over the head of the cabbage is a sure preventive against worms. We are strongly inclined to think that the surest way is to inspect the plants frequently and destroy the worms.

Strawberry plants may now be set out and new beds made. If planted this month a good crop of fruit may be expected next spring. We have had considerable success in the culture of strawberries, and our experience is all in favor of September planting and good mulching with pine straw.

The best soil for strawberries is a sandy loam, which should be deeply broken and pulverized. Lay it off in rows three and a half feet apart and plant at distances of twelve to eighteen inches in the row. As soon as the plants are well set, cover the vacant space between the rows and between the plants with a heavy mulch of hay, leaves, straw, or pine straw. This will not only prevent the growth

of weeds, but it will keep the soil moist in winter, and keep the fruit clean in the spring. Ashes, woods-earth, and a little good superphosphate are the best dressing for strawberry beds. Well rotted stable manure would be a good mulch and fertilizer at the same time, if it could be found free from the seeds of weeds and grass.

The Flower Garden.

Owing to the frequent rains of this season the growth of all flowering plants has been very luxuriant. This imposes upon us additional care and attention. Roses have grown out of shape, and their long straggling branches not only rob the plant of its nourishment, but cause the flowers to bloom imperfectly. No shoots should be left, but those which are needed to make new wood for next year. Many of the prettiest and most showy annuals if sown now will bloom before frost, and if the Fall be an open one, will furnish a Fall flower garden which will be almost as beautiful as that of Spring.

Dahlias are now in the full bloom of their beauty and rich variety of colors. Care should be taken to support them by stakes and strips of matting.

Keep the soil loose and free from weeds round all the plants.

This and the next month are the season for preparing for a fine Spring flower garden. As soon as the Fall flowering plants have been removed, fork the ground thoroughly, enrich by a liberal coating of woods-earth and ashes, and then fill the space with such bulbous roots as Tulips, Hyacinths, Narcissus, Ranunculus, Snowdrop, Crocus, and Anemone. In the spaces between the bulbs sow the seeds of hardy annuals of dwarf growth, which will thus get a sufficient start before the severe weather sets in, will shade the ground with their foliage in the Spring and present a beautiful appearance when the bulbs begin to bloom. Of the dwarf annuals the following are the most desirable, and can be easily raised :

Alysum, (sweet.)
Calliopsis.
Campanula.
Escholtzia, (several varieties.)
Forget-me-not.
Lupenius.
Nemophila, (several varieties.)
Phlox Drummondii.
Venus' Looking-Glass.

The Orchard.

This is the time to prepare the compost heaps for planting fruit trees later in the fall. A mixture of swamp muck or decayed leaves, and ashes and lime properly mixed, is the best compost that has yet been found.

Budding should be done now, without delay. Select the buds from a healthy shoot of this year's growth, and cut off the leaves so as to leave about half an inch of stalk to each bud. Make a longitudinal incision one inch long quite through the bark, on the part of the stock where you wish to insert the bud, and cross this with another cut at the top, so that the two will be in the shape of the letter T. Place the edge of the knife a little above the cross cut, and cutting slantingly downwards, remove a small piece of the outside of the bark in order to make room for the insertion of the bud. Then cut your bud from the "stick" by placing the edge of the knife about half an inch above the bud and cutting downward to about half an inch below it, take off a very little of the wood with the bud. Insert the foot of the bud into the cross incision on the stock, and push it down until it reaches the bottom of the longitudinal cut. Wrap with moistened strips of shuck above and below the germ, and the work is complete. Remove the shuck wrappings in about fourteen days, and if the bud looks alive you need not renew them. As soon as the sap begins to start in the spring cut off the stock an inch above the bud.

For the Southern Farm and Home.

Trees and Shrubs.

BY THE LATE WM. N. WHITE.

[Continued from last Number.]

TREES are generally divided into four classes : the Drooping, as the elm, willow, birch, etc. ; Round-headed, as the oak, ash, beech and walnut ; Oblong, as the Lombardy, and other poplars ; or, Spiry-topped, like the firs, larches, pines, etc.

Round-headed trees are graceful when young and picturesque when old. They should constitute the bulk of all plantations.

Spiry-topped trees are darker in color, gloomy and picturesque. There is a sameness and monotony about them when exclusively employed ; but they are valuable when judiciously used in irregular surfaces and steep banks. In level grounds, in the centre of a group, if very sparingly employed, they add much to the beau-

ty of the mass of round and oblong-headed trees from which they spring.

Oblong-headed trees may be more frequently employed to create variety, but they should never be employed exclusively. Their chief use is to relieve and break up into groups large masses of wood, and to give pyramidal centres to groups of round-headed trees. Lombardy poplars sparingly used with round-headed trees contrast finely with the straight lines of Italian architecture.

Drooping trees are characterized by grace and elegance. They cannot be employed to any extent in wild scenery, but are tasteful when planted singly, and give elegance to the whole. Their proper place, hence, is the border of a group, or the boundary of a plantation.

Strongly marked trees must be very cautiously used, hence the poplar, willow and drooping birch are most dangerous in the hands of a planter without much knowledge and good taste.

In planting trees, attention must be paid to the harmonies and contrasts presented in the forms and tints of the foliage, and in the effects of light and shadow, height and distance upon the various groups and single specimens. The different species must not be indiscriminately mixed all over the place, for this, instead of producing variety, has the opposite effect, and causes the most tiresome monotony. An oak, willow and poplar planted as a group would ruin all expression with their discordant forms. Three trees of the same kind would create sameness, unless relieved by groups of different species adjacent, both of which must be avoided.

Trees harmonize in shape, color, growth, or size, and lightness of foliage. If they differ in but one of these, they are distinct enough for variety; if in two or three of these, they become contrasts; if in three or four, they are opposite, and will not group well in general. Hence, if a leading expression is sought with variety, such species must be selected as harmonize in certain leading points. For instance, if gracefulness is sought, the willow alone would produce sameness; the elm agrees in form and drooping spray, but the foliage is larger and darker; so with the weeping birch; the common birch agrees in the airy lightness of its leaves. So these four trees would harmonize sufficiently in groups.

Hence, also, in intermingling trees of opposite characters, discord must be prevented by employing trees of intermediate character. A

group of light-colored trees may be connected with a spiry-topped group whose shades are almost black, by placing between them the dark-shaded, oblong and round-headed trees, such as the poplar, oak, etc. If thus connected, the whole becomes harmonious.

A very satisfactory mode of planting is to place those species and varieties together which require the same soil and situation, or are found growing in the same localities, and are obviously allied by nature. Some hardy sorts very similar may intermix with tender foreign species to prevent accidental extermination, but generally different species should not intermix and destroy the breadth of colors. The colors must both be connected and contrasted to produce the finest effect. The effect of a single tree often differs much from that of a group of the same kind. But every tree or group, however detached, must appear to belong to some group or mass; it must not stand alone and disconnected.

When cultivated fields adjoin the plantation, a few groups should extend into them, to break up the line of separation.

Artificial distance may be created by planting on the further side of the lawn or piece of water the lighter colored trees, and let the darker shades be planted in the foreground. This resembles perspective.

A park must not be crowded, and the surface must be varied; it must not want for breadth and extent; all feebleness and littleness must be excluded from the design; it should be in keeping with the natural scenery; all transitions should be insensible, and the undulations easy. The natural character of the scene must be heightened. If graceful, all accidental deformities must be removed or concealed. The graceful and picturesque parts must be kept distinct by intervening plantations. One side of a lawn should not be picturesque and the opposite side, at a short distance, graceful. Perfect flats are most difficult to improve. To cut off an external view do not plant a continuous, uniform belt around the whole, but by arranging the groups so that, seen from the given point, they shall seem connected as one whole. The hills should be planted in preference to the depressions.

The grand object in planting is to open from the windows, or front of the house, a wide surface diversified or broken up into a number of pleasing lawns or openings differing in size and form, to create a charming variety, so that the whole scene may form a lovely picture.

Household Department.

Domestic Receipts.

BY MRS. WM. N. WHITE.

PICKLED PEARS.—Pare the fruit, then add half pound of sugar to each pound of fruit. Put them in a jar—a layer of fruit and then a sprinkling of sugar, and let them stand all night. To the juice thus expressed add vinegar enough to cover them; cook half an hour, or until the pear looks transparent; spices to the taste. It is said that a small bit of horse-raddish root put into a jar with any kind of pickles will prevent scum from forming on the top. Peaches are very good pickled in this way.

PICKLED PEACHES.—Take cling-stone peaches, pare and halve them, and to five pounds of fruit allow two pounds of sugar and a pint of good cider vinegar, half ounce of cinnamon, and the same of cloves and mace; simmer the sugar and vinegar together, and remove all scum from the syrup; then put in the fruit and cook gently until done. Put into jars while hot and cork closely; keep in a cool place, and inspect them occasionally. Should a white mould appear upon the surface of the syrup it must be carefully removed and the syrup scalded and returned to the peaches. If preferred, the peaches can be pickled whole by first pouring boiling water on to the fruit, allowing it to remain in the water but three minutes; wipe them dry without breaking the skin, and proceed as above directed. Plums may be pickled in this way.

PICKLED CUCUMBERS.—Cut the cucumbers from the vines early in the morning; wipe them off with a soft cloth and put them into a jar, placing a layer of salt between each layer of cucumbers, and adding a little alum. Over the whole put a cloth, letting it lie closely on the last layer. Every two or three days remove the cloth, rinse it and replace until the greenish matter is thoroughly extracted. In this way you can keep the cucumbers all winter, pickling but a few at a time, as they often become soft lying in the vinegar.

CANNING TOMATOES.—Take ripe and fresh tomatoes, procured as late as possible in the season; cut off all bad spots, wash clean, and put them into a porcelain kettle to boil; cook a few minutes, till soft, then strain through a colander to separate the skins from the fruit. Put it in glass and earthen jars and bottles; set them in boiling water until hot; if not full, refill with boiling fruit, cork and seal. It makes it still

more secure to have ready a piece of thick cloth cemented on the under side, to come over the mouth of the jar or bottle and down on the neck; draw down tight, and tie securely with a strong string. If you have no corks or covers for your jars, two or three thicknesses of thick cloth, well coated with sealing wax placed over the jars while hot, and with a strong string tied securely; then more wax poured over the top and around the neck as far as the cloth comes. If well done, the cloth will be drawn down some in the middle when cold.

Before frost, pull your tomato vines and hang them in the cellar. Very many of the green fruit will ripen, affording fresh fruit for weeks. We have gathered them at Christmas as fresh as when gathered in mid-summer.

PEACH MARMALADE.—Take very ripe, soft yellow peaches, pare them and take out the pits, put them in a porcelain kettle, with one pound of white sugar to two of fruit. Let it all come to a boil, stirring constantly to prevent its adhering to the kettle and burning; strain it, rub the pulp through a sieve, return it to the fire, and boil it to a jelly.

TOMATO CORN CAKES.—Take a dozen ears of green corn; grate off the kernels fine; scald a dozen medium-sized tomatoes and remove the skins; beat three eggs well, and mix the whole with a pint of milk, and flour enough to make a batter; add salt, pepper, and allspice to the taste. Fry on a griddle, avoiding excess of grease.

TOMATO PUDDING.—Peel and slice the tomatoes; place a layer of them in the bottom of an earthen dish; cover with bread crumbs, well seasoned; add another layer of tomatoes, and cover with bread crumbs as before, and when the dish is filled place on the top a large spoonfull of butter. Put it into the oven, and if two layers of each fill the dish, it will bake in half an hour.

TOMATO MEAT PIE.—Cover the bottom of the pudding dish with bread crumbs; then make a layer of cold roasted beef, or other fresh meat, cut into small bits; then a layer of tomatoes peeled and sliced; between each layer a slight sprinkling of pepper and salt; continue a layer of each till the dish is full; let bread crumbs form the last layer; pour in a little nice gravy, and bake till the crust is brown. Serve hot.

GREEN CORN OMELET.—Grate the corn from twelve ears of boiled corn; beat up five eggs; stir them with the corn; season with pepper and salt. Put into the frying pan a lump of butter; when hot, pour in the mixture and fry

to a nice brown, browning the top with a hot shovel.

GREEN CORN PUDDING.—Grate the corn from three ears of green corn; beat five eggs light, and stir them into a quart of milk; add the corn, with a large teaspoon of salt, half a nutmeg grated, and a teaspoon of lemon extract; add sugar enough to make it sweet, and bake an hour.

BAKED TOMATOES.—Remove the skins from ripe tomatoes; cut them in half and place them in a deep baking dish; put bits of butter over them, and add salt, pepper, and a little sugar, flour and water, and bake an hour in a quick oven.

TO REMOVE MILDEW FROM LINEN.—Mix soft soap and salt together in equal quantities, and rub on the damaged places; lay it out on the grass exposed to sun and rain. If the mildew does not disappear with one application, try the same again.

TO REMOVE IRON RUST FROM LINEN.—Dip the spot in lemon juice and place it in the sun. Very sour buttermilk and salt mixed and well rubbed into the cloth and then exposed to the sun, will also remove it, without damaging the article by weakening the texture.

BELL PEPPER PICKLE.—Gather the peppers when green; slit one side and carefully take out the seeds and core; place them in a jar and pour over them a strong hot brine; let them remain eight or ten days in brine; soak them in fresh water until the salt is all taken out; stuff them with onions and mace; scald them in vinegar and water, and then put them in a jar of cold vinegar. Cover closely, and place in a dry cool place.

The Southern Farm and Home.

MACON, GA., SEPTEMBER, 1870.

J. W. BURKE & CO., - - - - Publishers.
WM. M. BROWNE, - - - - - Editor

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THE PROPOSED AGRICULTURAL CONGRESS.—It is proposed that an Agricultural Congress, to be composed of the leading Agriculturists of the Southern States, shall meet in Augusta on the 26th of October, during the Fair of the Cotton States Mechanics' and Agricultural Fair Association.

We cordially approve the purpose which the proposed Congress is designed to attain. The interests of the Southern planters have suffered materially in consequence of the absence of co-intelligence and co-operation, and if any organization can be formed which will supply the deficiency, it will do more substantial good to the Southern States than any Congress of which we have any knowledge.

The agricultural interests are undeniably the basis of our prosperity, and as they are cherished or neglected, the welfare of the entire people is promoted or retarded. Every plan, therefore, by which a knowledge of agricultural science is disseminated, the dignity of the vocation of the farmer elevated, his rights protected, and the information necessary for the successful pursuit of his business intelligently supplied, is a step in the right direction, and is entitled to the earnest support of every well-wisher of the South.

We fear, however, that the proposed body, to be composed of delegates from "the several State and County organizations throughout the country," would be too large and cumbrous a body to effect much practical good, and that an assembly, to be composed of two or three delegates from each of the State Agricultural Societies, to meet under the auspices of our own State Society, either during the Fair or soon thereafter, would prove more likely to fulfil the object in view. It would be large enough to be a thoroughly representative body, and not too large for the transaction of business.

The officers of the Cotton States Mechanics' and Agricultural Fair Association of Augusta are entitled to much credit for their proposal, and the public spirit they display in taking steps to carry it out.

We make the foregoing remarks as a suggestion offered in furtherance of, and not by any means in opposition to, the proposed Congress. We have had some experience of large bodies of men assembled from a distance to consult and deliberate, and are satisfied that the smaller the assembly, provided it be really representative, the greater the good it is able to accomplish.

WE are informed that the Hon. David W. Lewis, Secretary, has appointed Dr. W. C. Moore, Assistant Secretary of the State Agricultural Society.

THE EUROPEAN WAR AND THE PRICE OF COTTON.—No subject engages more anxious attention throughout the Southern States at the present time than the probable influence of the war between France and Prussia upon the price of cotton. We daily receive letters asking what we "think about it"—how long the war will last—will England be dragged into it—will not a prolonged European war stimulate manufactures in our own country, etc. To all of which questions we confess our utter inability to give a response other than crude conjecture.

We have very little faith in the outgivings of cotton prophets at any time. They "miss" it quite as often as the writers of weather almanacs.

We do not expect that the market will open at anything like the high figures of last year, neither do we look for the extremely low prices predicted by the pessimists. In any event, we recommend planters to send their cotton to market and sell it as fast as they can get it ready, pay their commission merchants, and then, if they have a surplus after paying their debts, they may consider whether it is better to sell or to hold.

We do not believe, from the accounts before us, that the crop of 1870 will be larger than that of 1869, if indeed it be as large, though the area planted may be more extensive than that of last year. But, however this may be,—a four million bales crop or not, war or peace,—we earnestly recommend planters to pick, gin, pack, send to market and sell as quickly as possible all that may be necessary to pay their debts and sustain their credit.

CROP NEWS.—Will our planting friends do us great favor to send us accounts of the crops in their vicinity, prepared as nearly as practicable up to the fifteenth of the month, giving all necessary details to make the report satisfactorily full?

Accurate information is much needed, and will prove of inestimable service.

HON. L. Q. C. LAMAR.—We rejoice to learn that the Hon. L. Q. C. Lamar, L. L. D., has accepted the professorship of Belles Lettres and History, to which he has been recently elected by the trustees of Emory College, Oxford. As

a scholar, jurist, statesman and patriot, Colonel Lamar stands high among the highest, and as a Christian gentleman he has no superior.

We heartily congratulate Emory College on this accession of strength to the faculty, and wish that excellent institution the large measure of success and wide sphere of usefulness which it so richly deserves.

We acknowledge with thanks the receipt of the Catalogue of the Officers, Alumni, and Students of the Bowdon Collegiate Institution, Bowdon, Carroll county, Georgia, for 1869-70; also the Premium List of the First Annual Fair of the Central Georgia Agricultural and Manufacturing Company, to be held near Macon, Georgia, on October 3d and five succeeding days. We cordially wish the Central Georgia Agricultural and Manufacturing Company the utmost success.

HOW TO DRY PEACHES.—The late William N. White published, many years ago, the following receipt for drying peaches:

"Take those of the best quality just as they are ripe enough to eat; halve them, remove the stone, and sprinkle over them in the hollow a little nice sugar; dry them in the oven after the bread or pastry has been withdrawn. They are far better than if dried in the sun, retaining their aroma and flavor, besides being entirely free from insects. Prepared in this way from peaches fully ripe, they need no cooking, but are simply soaked out in cold water. All the sugar they require is added while drying. Peaches thus prepared are only inferior to the fresh fruit in flavor. If preferred, the fruit may be taken not quite so ripe and peeled, but the flavor is not as good as when fully ripe, and it dissipates more in the process of drying."

PARTIES who send us letters or circulars, inclosing advertisements, if they wish them inserted, would do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we now have, are liberal enough.

WE REQUEST subscribers not to send us local bills not current in Macon, or torn currency which we cannot use. Remit by Postoffice order, Registered letter or by Express to insure our getting it.

NEW PAPER.—We welcome among our exchanges the *Arkansas Agricultural and Mechanical Journal*, published at Little Rock, by John S. Duffie & Co., and edited by a number of distinguished gentlemen. Terms, \$2 50 per annum. The Journal displays ability, enterprise and taste.

We also welcome the *Cartersville Standard*, published weekly, by Wikle & Woods, at \$2 per annum.

TO ADVERTISERS.—We beg leave to request persons who favor us with advertisements for the *FARM AND HOME* to send them so that they will reach us on or before the 15th of every month.

THE PRINCIPAL of Norwood School, Nelson county, Virginia, W. D. Cabell, has our thanks for a copy of the catalogue of that institution for the scholastic year 1869-70.

We are indebted to Hon. Horace Capron, Commissioner of Agriculture, for copies of the latest reports of his Department.

ABBEVILLE, ALA., August, 1870.

Editor Farm and Home:

I have five acres of land, with a good stiff clay subsoil that I planted in Norway Oats last January, and harvested twenty-five or thirty bushels of oats to the acre. Immediately I sowed speckled peas, one bushel to the acre, and want to turn them under and sow Barley. What time is the best to sow Barley? How much seed to the acre? Which is the best fertilizer to use? How much to the acre? Ought barley to be plowed in deep or shallow? Should there be lime sowed broadcast when the peas are turned under? If so, how much to the acre? Where can I find a good quality of Barley?

By answering the above in your valuable journal, you will confer a favor on

A SUBSCRIBER.

1. Barley should be shown by the middle or end of this month.
2. Two or two and a half bushels per acre are the proper quantity to be sown on good land.
3. A mixture of Peruvian guano, one hundred pounds, and dissolved bones, two hundred pounds, will prove an excellent fertilizer.
4. Plow in the seed the same depth as wheat.
5. The lime should be strewn over the peas just before they are turned under.
6. Any reliable seedman or commission merchant will supply good seed barley.

PERSONS sending orders for articles advertised in our Magazine, are respectfully requested to state in their order that they saw the advertisement in the *FARM AND HOME*.

ANSWERS TO CORRESPONDENTS.

HYDRAULIC RAMS.—We have received several letters from subscribers, and some who are not subscribers, asking information in relation to hydraulic rams as the means of elevating water from a spring or branch to supply the house and lot with water.

We cannot speak from actual experience, but we have recently made inquiry on the subject, with a view to purchase some machine of the kind for the purpose mentioned above, and we would advise all inquirers to address themselves to Captain W. W. Parker, Agricultural Warehouse, Macon, Ga., who can give them all the information they need and then supply them with the machine they require. Capt. Parker is entirely reliable, thoroughly understands his business, and will not recommend any article which is not good.

The theory of hydraulic rams is that one will elevate one-sixth of the water flowing into it to a height of eight feet for every foot of fall from the spring to the ram, and that this power is immensely increased by every additional foot of fall. A fall of three feet would, it is said, elevate the water from forty to fifty feet.

The ram should be situated near a good unfailing spring, where it is not liable to overflow or being clogged. The prices vary according to size, but one of average size can be bought for about \$25. The expense of the pipe depends upon the length of pipe required.

MIXING LIME WITH COMPOST.—J. B. S., of Pulaski county, asks whether it would not be of advantage to sprinkle lime on his manure pile as he forks it over. We answer decidedly not. The application of lime, instead of doing any good, does positive injury, because it causes the best part of the manure to escape in gas. In all organic bodies in process of putrefaction which contain nitrogen and water, two compounds are made. The nitrogen joining with the hydrogen of the water forms ammonia and the oxygen of the water uniting with the carbon of the decaying substance forms carbonic acid. The union of the ammonia and carbonic acid forms carbonate of ammonia, which is a volatile salt.

If you add lime to a substance like stable

manure, which holds carbonate of ammonia in a state of solution, this volatile salt becomes decomposed, the lime expels the carbonic acid, leaving caustic ammonia which is very volatile, and which escapes rapidly in gas, thus depriving the manure of all its nitrogen, and consequently leaving it comparatively valueless, as the value of manures depends upon the quantity of nitrogen they contain.

CROWDED OUT.—We regret our inability to find room in this number for a communication from B. S. Bateman, of Byron, Houston county. It will appear in our next, along with other matter of interest, which has reached us too late for this month's publication.

COLIC IN MULES.—T. R., of Baldwin, asks what is the best remedy for colic in mules, having lost this season two fine mules from this complaint. We believe that an ounce of sulphuric ether and an ounce of laudanum in a pint of lukewarm water, given at a dose, will generally work a cure; but if not, a repetition of the dose at an interval of half an hour will certainly succeed.

We have known ordinary cases of colic cured by administering copious injections; and it is well, also, to give the sick animal a ball containing about seven drachms of aloes, to cleanse the intestines.

The practice of galloping horses or mules suffering from colic, under the whip, is both absurd and inhuman. The poor animal needs rest.

BROOM CORN.—A subscriber, writing from Griffin, Ga., asks information as to the harvesting of Broom Corn.

We have no practical experience on the subject, but we copy from the report of the Department of Agriculture for August and September, 1867, the following from the pen of a reliable correspondent of the Department:

"* * * * *

In sixty days from planting, the brush is fully out, and it is then broken about two feet from the lowest branches, and after one day it is cut with a stem six or eight inches, and taken to a comber or thresher (two revolving spiked cylinders,) driven by power, and the seed removed; thence it is carried to drying-houses and placed on slats or poles in tiers with one foot space. After being dried it is sized and packed into bundles, ready for manufacturing into brooms. Broom corn farmers prefer cutting when the

brush is green, as the green broom is more saleable than the red (ripe) brush."

MANURE FOR FRUIT TREES.—Downing, the world-renowned horticulturist and pomologist, says that the best compost for fruit trees is peat and ashes—five bushels of fresh or ten bushels of leached ashes and a wagon load of peat containing lime, potash, and phosphates. Let this compost lie a fortnight. Add to every cart load two bushels of air-slacked lime for apple trees.

Add half bushel of ground bones, two bushels of leached ashes, or five pounds of dissolved potash for pear trees.

Add half bushel of lime, half bushel of ashes, and a peck of salt for plum trees.

Add two bushels leached ashes for peach and cherry trees.

Add one bushel of lime, one bushel of ashes, and half bushel of plaster for grape vines.

This compost may be put on two inches thick, and forked in so as to cover the ground as far as the roots extend. The proportions vary according to the quantity of the compost needed.

By the analysis of Dr. Emmons, the ash of the apple tree contains more than one-half lime. So lime largely predominates in the manure. The ashes of the pear tree contains the largest amount of phosphate of lime. So bone dust should preponderate in the manure. [Where peat is not attainable, dried swamp muck or good rich woods earth, or leaf mould is an excellent substitute.—ED. F. & H.]

A SUBSCRIBER, writing from Perry, Georgia, asks us: "Do you know anything about the 'Bowden' wheat that is raised in Kentucky; said to be very prolific, and a sure crop? What grain or grasses would be best to sow that would come in early, say February, with a succession from that time until oats are made? Please give me the desired information, in order that I may make my depleted corn crib hold out to make another crop."

[We have no knowledge of the peculiar characteristics of the wheat referred to by our correspondent. We have found the Tapahannock wheat prolific, early, and as sure as any other variety. Rye or Barley sown this month on rich, well-prepared land will afford excellent pasture until March, and then yield a good crop of grain in due season. The Scarlet Clover, (*Trifolium Incarnatum*,) if sown immediately, sixteen or twenty pounds seed to the acre, on good, well-pulverized land, will furnish an abundance of green food to be cut and fed to stock by the end of February.]

LESPEDEZA STRIATA.—J. W. B., a valued friend whom we met recently in Newton county, asked us a number of questions about the *Lespedeza Striata*, which caused such a sensation in the Southern Agricultural world two or three years ago, and which our friend believes may be made a valuable addition to our forage crops.

We cannot agree with our friend as to its value. We think that it may be a little better than sedge, but that is all. It is stringy and woody, by no means popular with horses or cattle which can get anything else to eat than a very small modicum of Northern hay, and where it attains the rankest growth it makes but indifferent hay.

Why it has been unnoticed until so recently, we cannot explain. It is said to derive its name from the Spanish Governor of Florida, Lespedez, and was first described by Michaux, the Naturalist, in 1800. We subjoin an engraving of the *Lespedeza Striata* to gratify our anxious friend and satisfy all inquirers.

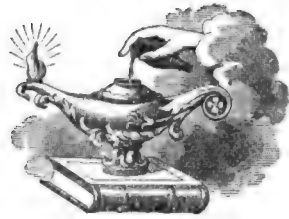


THE BEST VARIETY OF STRAWBERRIES.—We are frequently asked our opinion as to the best variety of strawberry for culture in our climate. We have tried several of the seedlings which have been advertised during the past few years, for each of which some marked superiority in size, flavor and capacity of bearing transporta-

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tion to market, was claimed by its originator. We believe that there are close on fifteen hundred distinct varieties, of which we have tried about a dozen, coming to the conclusion that Wilson's Albany is incomparably the best for our climate. Next to the Wilson we prefer the *Triomphe de Gand*, and next to that Hovey's Seedling.

Literary Department.



EDITOR'S BOOK TABLE.

We find among the pile of books upon our table two which *par excellence* deserve notice and commendation, because they are essentially good books. They are, 1. *Sermons by the late Frederick W. Robertson*; and 2. *The Life, Letters, Lectures and Addresses of Rev. Frederick W. Robertson*, (Harper & Brothers.) Mr. Robertson was one of the most gifted, learned, eloquent and evangelical preachers of the Church of England, and incumbent of a parish in Brighton, one of the most fashionable watering places in England. His sermons display great power, acuteness of perception, explicitness of expression, delicacy of sentiment, and a beautiful, simple faith in the Holy Scriptures as the sole authority in matters of religion. We wish that our space would permit us to make such extracts from this book as would illustrate the gifted writer's thought and purpose, but we have chosen one which expresses his convictions as to the divinity of the Saviour, which shows the spirit in which he wrote and preached:

"See Him as He was. Breathe His spirit. After that try to comprehend His life. Enter in His childhood. Feel with Him when He looked round about Him in anger—when He vindicated the crushed woman from the powerless venom of her ferocious accusers; when He stood alone in the solitary majesty of Truth in Pilate's judgment hall; when the light of the Roman soldiers' torches flashed on Kedron in the dark night, and He knew that watching was too late; when His heart-strings gave way upon the cross. Walk with Him through the marriage feast. See how the sick and weary came

to Him instinctively; how men, when they saw Him, felt their sin, they knew not why, and fell at His feet; how guilt unconsciously revealed itself and all that was good in men was drawn out, and they became higher than themselves in His presence. Realize this. Live with Him, till He becomes a living thought—ever present. And you will find a reverence growing up which compares with nothing else in human feeling. You will feel that a slighting word spoken of Him wounds with a dart more sharp than personal insult."

Robertson's Letters and Addresses display an admirable combination of simplicity and acuteness, of severity of judgment and gentle toleration, of the plain and practical enunciation of truth, and the practical enthusiasm of devotion.

Mr. Brooke, the compiler and editor of the *Life and Letters*, is entitled to popular gratitude for the delicacy and judgment with which he has arranged this most delightful and edifying volume.

We have read with much interest and entertainment *Free Russia*, by William Hepworth Dixon, (Harper & Brothers.) It is an account of his observation during two or three visits to "All the Russias," pleasantly written on the whole, though occasionally abrupt, and not unfrequently oracular and flippant. There is nothing from the Baltic to the Chinese wall on which he is not fully prepared to express an off-hand judgment, from which he evidently thinks an appeal would be absurd.

Although his impressions are often manifestly based on imperfect information, derived from prejudiced sources, and formed with too much haste, the book contains a large amount of very useful information concerning the Russia of today. His chapters on the emancipation of the serfs, and the mighty change which this act of the Czar has wrought in the condition of the Empire, are exceedingly interesting and would have been more so had they been fuller.

From the publishing house of D. Appleton & Co. we have received:

The Vale of Cedars;

Home Influences;

The Mother's Recompense;

Woman's Friendship;

And *The Days of Bruce;*

by Grace Aguilar, being part of a new and beautifully executed edition of the works of that peculiarly gifted and charming author. We know of no better light-reading for young people than is contained in these volumes. They are entertaining, without being sensational, full of that pure morality which Grace Aguilar always aims to teach, and written with grace,

ease, and purity of style and language. *The Days of Bruce* is a charming narrative of one of the most romantic periods of history—the story of the noble liberator of Scotland combined with the touching incidents of the life of the noble Isabella of Buchan, the unhappy Isoline, and the almost angelic Agnes.

In the delineation of female character—the impulses and feelings which constitute woman's nature, Grace Aguilar is unsurpassed by any writer of our time, and is entitled, in our opinion, among female authors to the next place to Maria Edgeworth.

The Appletons have also sent us *The Woman of Business*, or *The Lady and the Lawyer*, by Marmion Savage, author of "The Bachelor of the Albany;" *The Lady of the Ice*, by James De Mille, author of "The Dodge Club Abroad," and "Cord and Creese;" *Silvia*, by Julia Kavanagh, and *Miriam Aloy*, by Disraeli. The two first mentioned novels appeared as serials in that excellent periodical, Appleton's Journal, and are now published in book form. *The Woman of Business* is a tale of considerable power, and *The Lady of the Ice* is one of the most enjoyable and laughter-provoking books we have read in a long time.

Silvia is a very fresh and pretty book. The heroine is a charming creation, and the other characters which follow her fortunes and with her make up the fabric of the story—poor, delicate, dirt-hating Josephine, retired, peaceful and classical Don Sabino, the ill-tempered and fussy Principessa, the "used up" Mr. Lovell, rich and disagreeable the social Lady John, and the extravagantly silly Captain—are drawn with much skill. *Silvia* is far above the average of modern novels.

Breezie Langton, by Hawley Smart, author of "A Race for a Wife," also from the Appletons' press, is a novel well worth reading. The chapters relating to incidents of the Crimean war and Eastern life are especially well-written and entertaining.

The Rob Roy on the Jordan, Nile, Red Sea, and Gennesareth, a Canoe Cruise, by J. Macgregor, (Harper & Brothers,) is a most agreeable account of the singular adventures of the only man who has ever traced the Jordan from its source in the mountains of Syria to its mouth in the Dead Sea. With a frail canoe as his sole means of locomotion, he frequently found "Jordan a hard road to travel," having had many perilous experiences of the Arabs, being captured once, canoe and all, and being frequently obliged to pay the internal revenue tax of that

country, which is called *backshish*, to purchase permission to continue his explorations.

The book has many well-executed engravings and maps, and is altogether, in form and substance, a very pleasant book of travel.

The Writings of Anne Isabella Thackeray, with illustrations, (Harper & Brothers,) is a collection of fugitive pieces written at different times and in different places by the gifted daughter of the great English novelist. While none of them possess any very high order of merit, they are all readable and amusing.

Stern Necessity, by F. W. Robinson, is a good story, cleverly told, and entirely original. It cannot fail to be read with deep interest and deserves a firmer hold on popular attention than is commonly given to ordinary works of fiction.

Mrs. Oliphant's *John*, a Love Story, (Harper & Brothers,) is another good book, remarkable for the deep thought and earnestness of purpose which characterize the writings of the author of the "Chronicles of Carlingford" and "The Brownlows."

Mrs. Oliphant has written a great deal, but she has always written well. In each work she not only sustains but improves her reputation as one of the foremost of modern novelists.

The best, most exciting, or rather we should say most intensely interesting of all the novels on our table is, *Man and Wife*, by Wilkie Collins, (Harper & Brothers.) We cannot give it higher praise than to say it is one of the best of Collins' works. The plot is marvellously ingenious, the interest always lively and sustained, the style admirable, and the purpose praiseworthy. The author's aim is to show the dangerous fallacies of what is called "Muscular Christianity," and to expose the wrong and injustice often done by the peculiar marriage laws of Scotland.

Man and Wife is a novel of that sort which when commenced, you want to finish without laying it down. It is bright and entertaining, and at the same time instructive.

Kilmeny, by William Black, and *Guardlines' Harvest*, by the author of Carlyon's Year, (Harper & Brothers,) have been received, but we must defer notice of them until our next number.

As we were going to press, we received from D. Appleton & Co., *The Women of Israel*, two volumes, by Grace Aguilar, and *Contingaby*, by the Right Honorable B. Disraeli, which we expect to notice in our next.

Harper's Monthly for August is brim-full of interesting and instructive matter; witness the

following table of contents, exclusive of the Easy Chair, Table and Drawers of the Editor: The Raquette Club, by Charles Hallock; South Coast Saunterings in England (Saunter VI)—Canterbury I—by M. D. Conway; My Mocking-Bird, by Julia C. R. Dorr; The Electric Light, by Jacob Abbott; A Visit to Bangkok, by Allan D. Brown; The Auto da Fe of 1755, by W. W. Woodson; Early History of Colorado, by William M. Byers; Two Hearts, by Harriet Prescott Spofford; Frederick the Great—IX—The Campaign of Moravia; The Old Love Again, by Annie Thomas; By-paths to Prosperity, by William C. Wycoff; Played to the End, by the author of "My Daughter Elinor;" American Artists in Italy, by Samuel Osgood, D. D.; As Easy as Lying, by Leonard W. Sewell; Two Poets, by Charles Landor; Only Clodhoppers, by Mrs. Frank McCarthy; Female Suffrage—A Letter to the Christian Women of America, Part I, by Susan F. Cooper; Anteros, by the author of "Guy Livingstone;" Heart Ache, by Carl Spencer.

Lippincott's Magazine for August has the following well-stocked table of contents: Southern Society; Amy's Lover, a Story, by Florence Marryat; The One Sweet Thing that is Lost to me, a Poem, by Howard Glyndon; The Virginia Tourist, Part III, by Edward A. Pollard; The Emperor Alexander; The Old Book Shops of London and Paris; Sir Harry Hotspur of Humblethwaite, a Novel, by Anthony Trollope; On the Hypothesis of Evolution, by Prof. Edward D. Cope; Our Castles, by Edward Spencer; The Hungry Heart; The Dominican Republic and Annexation, by H. Hargrave; Noncarra's Bad Luck; The Island of Time, a Poem; Our Monthly Gossip; Literature of the Day.

The August number of the *Rural Carolinian* (Walker, Evans & Cogswell, Charleston, S. C., \$2 per annum) is an admirable number of one of the best Agricultural periodicals now published in the United States. The illustrated article on the Cotton Caterpillar, by Dr. D. L. Phares, is well worth perusal.

The Southern Cultivator for August comes to us slightly reduced in the size of its pages, printed in a little larger type, and the number of pages increased from thirty-two to forty. The contents, as usual, are varied and instructive. The editor republishes an article on Gates, by Mr. R. Ward, of South Carolina, with an illustration which our respected cotemporary remarks "appeared in another journal recently, as it originally contributed to it." As we pub-

lished the article two or three months ago, giving full credit to the *South Carolina Agriculturist*, from which we copied it, we do not suppose that the reference to "another journal" is to the *FARM AND HOME*; but as friends who have noticed the paragraph in the *Cultivator* believe it referred to us, we notice it to show that such a reference would be unjust, as we took special care to state that the article was not "originally contributed" to our magazine.

The *American Agriculturist* for August is, as usual, excellent in every department.

We have received *The Maryland Farmer*,
The New England Farmer,
The Country Gentleman,
The American Farmer,
The Arkansas Agricultural and Mechanical Journal,

The Southern Agriculturist,
The Southland,
The Farmer and Artizan,
 And *The Carolina Farmer*,

all containing valuable matter, and well worth much more than the subscription price.

We acknowledge the receipt of the August number of the *Old and New*, a monthly magazine, published by Roberts Brothers, of Boston, Mass., at \$4 per annum. The following is the table of contents: Old and New; Pink and White Tyranny, by Mrs. H. B. Stowe; Northern Pacific Railroad, by Geo. M. Steele; She Writes, by Elise Polko; Francis of Assisi, by S. Farrington; American Political Literature, by Edward A. Pollard; The Passion Play; Chinese Transcendentalism, by John Edgar Johnson; John Whopper, the Newsboy; At Last; Validity of our Knowledge of God, by Orville Dewey; The Fenian Campaign, by C. H. Tuttle.

S. Boardman & Co., Rochester, New York, have had the kindness to send us their catalogue of Nursery stock, containing a description of the Fruit and Ornamental Trees, Shrubs, Vines, Roses, etc., which they cultivate at their Nurseries.

For the *Southern Farm and Home*.

THE WRONG PHIAL, AND ITS CONSEQUENCES.

Concluded from August Number.

WHILE Hartwell was out superintending the housing and feeding of the stock, Dr. Randolph and his sister drove up and were received in the parlor by Julia and Mrs. Ardis. After the ordinary questions and answers prescribed by po-

lite society were gone through with, Kate Randolph asked Mrs. Ardis to tell her something of the young man who had recently become a member of her household.

"Oh! you mean Mr. Hartwell, I presume."

"Yes, who and what is he?"

"Well, really I know but little about him, and scarcely ever see him except at meals. All I know about him is, he came here one night with his stick and wallet, when Dr. Ardis took charge of him, partly as overseer, partly as protege, and he will in all likelihood turn out a Carpet-Bagger in the end."

Julia.—"But, mother, you must remember he has rented the plantation, and has the sole management of it himself, with fine prospects, so father says, of doing very well in the end."

Mrs. A.—"Any sort of prospects are fine ones in his eyes, daughter, and the end isn't yet."

Dr. R.—"I think I shall have to act as umpire between you and your mother, Miss Julia, and decide who and what your Mr. Hartwell is."

Julia.—"Well, but father says his management is superb, and that the negroes work for him like they belong to him."

Mrs. A.—"Who ever doubted a Yankee's management? And as for his getting work out of the negroes that only confirms my suspicions, for they would poke their heads into the fire for a Yankee. Don't you recollect, during the summer of 1865, when a company of Yankee soldiers was stationed in town, what happened to Jake? He carried a cart load of melons to town, and instead of selling them on the street, drove out to camp, thinking the soldiers would pay him the highest price, when the mean things reminded him that they had fought to set him free, and told him he ought to give them the melons without pay. And what do you suppose the fool did? Why, he told them to help themselves, and they took half of his melons, and picked for the best at that.* Don't you recollect, too, what Jake's excuse was when your father laughed at him for being so bamboozled by his Yankee friends? He said, 'Well, marster, I seed soon as eber dey clum up on de cart dey was gwine to take um any how, an' so I jes say to um dey mought hab sum un um, and den dey tuck half of my water millions and neber say dime wunce. I don't b'leve dey's nothin' but poor white folks, no how.'"

* A fact.

Mrs. Ardis, having told this anecdote, felt as if she had exhausted the argument and left the room. Soon after which Hartwell entered and was introduced by Julia to her two friends.

It is always more or less embarrassing to be introduced to strangers. One is apt to feel that the company is an acrid acid gotten up on purpose to try him, and into which he is about to be plunged, to be proven if pure gold, or eaten to a honeycomb if base metal. On this occasion it was particularly trying to Hartwell, who as he entered the house had seen Mrs. Ardis leaving the parlor, and he more than suspected that himself had been the subject of remark, if not of the sharpest criticism. In spite of his best endeavors to be self-possessed, he was confused; his head swam, and in his attempt to be seated upset the chair and came nigh falling himself. Julia was too polite to laugh if she had felt so disposed, but she felt more chagrined than amused, for she saw from Doctor Randolph's looks that his first impressions were unfavorable, and that Hartwell, by his embarrassment and awkwardness, had given point to her mother's sarcasms. However, he soon rallied, took some part in the conversation, and while at tea wholly recovered his usual serenity. Tea over, and the young people again in the parlor, Hartwell prevailed on the young ladies to go to the piano, that he might shelter his silence under a plea of listening to their fine duets.

Miss Randolph.—"I am surprised, Mr. Hartwell, that such spirited music should make you so very pensive."

Hartwell.—"Upon me that is the usual effect of all music except the comic—it produces introversion and revery."

Dr. Randolph.—"Young ladies, suppose you try some of your comic songs upon Mr. Hartwell."

Hartwell.—"Excuse me, Doctor, such reveries, though a little tinged with melancholy, are far from disagreeable."

Soon after the young ladies had done playing, Hartwell, under the plea of a slight indisposition, made his bow and retired to his room.

Kate.—"Oh, Julia, he is so handsome! I'm sure he is no Yankee adventurer, as your mother supposes."

Dr. R.—"He's a riddle."

Julia.—"He is so to me; I can as little expound him as he can comprehend me."

Kate.—"His bearing is fine, and his countenance very expressive, but he seems too reserved and melancholy."

Julia.—"He seems to me to be not at all demonstrative."

Dr. R.—"He has the appearance of one whose conscience is ill at ease—probably it is remorse for having slain so many Southern soldiers in battle."

Julia.—"I suppose, Dr. Randolph, you mean that for your award as umpire between myself and mother?"

Dr. R.—"Yes, Miss Julia, if you choose to take it so?"

Julia.—"Thank you, sir; when I submit my matters of difference to an umpire, I hope to have some hand in his selection, and will endeavor to choose one who is wholly unbiassed."

Dr. R.—"Unbiassed! Surely, Miss Julia, my prejudices were all in your favor."

Julia.—"And against Mr. Hartwell."

Kate.—"A truce to your disputes; otherwise there will be a case for me to arbitrate."

It is now the first of June, which is in most respects, if the seasons have been propitious, the most interesting and delightful part of the year to the farmer. Ye denizens of the town, go with Miss Ardis and Hartwell, who are engaged for a horseback ride this afternoon about six o'clock.

You have reached the bluff that lets you down by a rather abrupt descent into the valley of the Alabama. Now halt awhile and contemplate the scene before you. You perceive there is no corresponding valley on the opposite side of the river, but that the hills over there are much higher than the one you are upon, and are bathed in the golden splendors of the setting sun, while the river, and the intervening twelve hundred acres of corn and cotton in the greenest stage of their growth, are shaded by the hills behind you. See that spiral column of smoke, black enough and dense enough to have come out of Tophet; see how it slowly ascends and divides in two parts the golden-tinted hills. That is a river steamer just leaving a wood-yard, with her boilers newly gorged with resinous pine. Look away to the right at that patch of yellow growth, which is swaying to and fro as the evening breeze strikes it, and whose undulating motions seem, at this distance, to be keeping time to the song of the reapers, who are laying down the ripe oats in swaths with their cradles. Can ye show a panorama equal in beauty to that? Now descend into the fields. Every sense you have except that of smell is lulled to sleep by the delicious odor with which the whole atmosphere is charged, and which,

every evening, as soon as the sun sinks behind the hills, is set free from the great blooms of the magnolia and bay. The trees are far away on the margins of the river and branches, but so much the better, for distance tones down the incense, and modifies it too by permitting the mingled contributions from thousands of wild flowers, each one of which has a distinct fragrance of its own. Ye chemists! have ye ever sent out anything like that from your stills and retorts? No, your artificial compounds, compared with this delicious perfume from Nature's laboratory, are fœtid and nauseous to a delicate taste.

Hartwell and Julia rode slowly along, feasting their eyes, exhaling the incense, and indulging in just such conversation as was naturally suggested by the lovely scene, when the sudden starting of a hare caused Julia's mare to shy, and she lost at the same time her presence of mind and her balance, but quick as thought Hartwell caught her by the arm, let her down upon her feet, and was instantly on his own by her side.

"Miss Julia," said he, "if you comprehended your situation, I'm sure you will acknowledge that you owe me your life."

"And will you exact such heavy repayment?" replied she.

"Oh, no! as you have long been the divinity of my soul, your heart, will a thousand times repay me."

A short silence, a glance from a pair of blue eyes, and the divinity was folded in the worshipper's embrace.

"Miss Julia," said Hartwell, "I will hitch my own horse to this bush, and go after the runaway, who I see grazing a few hundred yards down the river."

While he was gone, Julia busied herself gathering wild flowers and improvising a bouquet. Hartwell having returned with the mare and lifted Julia into the saddle, mounted and said:

"The last rays of the sun are gone from the hills, and we must ride with some speed. Are you afraid to let out the mare?"

In reply, Julia handed Hartwell her little hat, with the bouquet in it, and grasping the reins with a firm hand struck the mare with her riding whip, saying as she did so:

"We will measure every foot of the distance at a hand-gallop, for I wish to show you that I *can ride*, and at the same time punish Madame Sontag for her treachery."

The summer passed pleasantly, for there was much company at the Plateau from town and

country, and rides and pic-nics were indulged in as long as the warm weather lasted. When the first of October arrived, Hartwell proposed an early day to Julia for the celebration of their nuptials, but she preferred the following spring. He had special reasons for naming the 25th of October, or the 10th of November at furthest. She insisted on knowing his special reasons for so much haste. He declined giving them, but assured her they should be satisfactory when she knew them; so the latter date was agreed upon as a compromise.

On the 25th of October, Hartwell went down, by the invitation of Dr. Randolph, to take tea with himself and sister at his mother's, where he arrived and was hospitably received by the family.

This invitation to tea had been suggested by Mrs. Randolph, on learning that Hartwell had served throughout the war in the army of Virginia, hoping that he could tell her something by which she would be enabled to recover the remains of a son, the manner of whose death, and whose last resting place had hitherto baffled all research.

"You think, then, Mrs. Randolph, you have a perfect recollection of your lost boy?" inquired Hartwell.

"Certainly," said she, "we have no likeness of him, but his image is photographed upon my memory."

"Did he at all resemble his sister or his brother, the Doctor?"

"Not much."

"Who, then, was he like? Did he resemble me at all?"

"In nothing, except—"

Hartwell here rolled up his coat sleeve, unbuttoned his wristband, and held out his arm, at a glimpse of which Mrs. Randolph threw herself upon his neck, exclaiming:

"Oh! my poor boy! my precious child!"

Kate was not long in solving the mystery and adding her tears and embraces, whilst the Doctor had to seek the night air, and wait until his mother and sister had somewhat recovered from their delirium of joy.

You may be sure that for six long weary years the oak had not burned with a glow so cheerful, nor the lamps blazed with a flame so brilliant as they did on that night in the house of Mrs. Randolph. After tea it took Hartwell until near twelve o'clock to answer questions and defend himself against the severe but loving rebukes of the family, for being so near them and not revealing himself.

"You know," said he, "I was just seventeen years of age when the war broke out, and was in town preparing for college under Mr. F. I was sufficiently tall for my age, but, as you remember, was puny and lifeless, and had heard my state of health discussed until, like Keats, I could, at times, feel the daisies growing over my grave. Having but little, therefore, to apprehend by the venture, Tom Ashurst and I agreed to runaway and join one of the companies that were being raised in Georgia. We took the cars for Columbus, joined a volunteer company, went to Virginia, and was afterwards transferred to an Alabama regiment commanded by Colonel Lomax. I commenced improving in health as soon as I began to travel; had the measles in camp, but we were in good quarters, with but little to do, so I soon became convalescent, and from that day to this have not had a day's sickness. It was owing to the fact that the first companies that enlisted had, at first, but little to do, that saved my life. When active service did come, I improved every day upon hard tack and harder labor. After Lee's surrender, I rambled off into the Valley of the Shenandoah, where I lived a year with a kind-hearted old farmer whose acquaintance I had made in my campaigns. Last December I determined to come home, but before reaching S——, met with Mr. G——, whom I had known well in that town. He did not know me, nor did I make myself known to him. At S—— I met and talked with several with whom I had been at school, with the same result. Having ascertained that the wreck of father's estate had been administered upon and divided between you, and thinking your home under these circumstances was no proper place for a young man who felt competent to take care of himself, I determined to preserve an incognito with which circumstances had clothed me. What occurred afterwards you all know."

Kate.—"Oh yes, we know it all."

Hartwell.—"But there is something you do not know."

Kate.—"What is it?"

Hartwell.—"I'm engaged to be married to your friend, Julia."

Again Mrs. Randolph and Kate threw themselves upon his neck and gave vent to their joy in tears, whilst the Doctor again sought the night air—this time not to avoid witnessing the joy of others, but to conceal a pang that marred his own.

"Yes," continued Hartwell, "I'm to be married on the approaching 10th, but I must put

you all under bonds to keep these things a profound secret."

The tenth arrived, and with it a large company from town and country. Among them were some of Julia's special admirers, who said they had come to see that fellow Hartwell, Dr. Ardis' overseer, whom one of the first girls in the State was about to marry against the wishes of every friend she had in the world. The grove at the Plateau was ablaze with torch-lights and alive with servants and horses and carriages. Within, a crowd of faces aglow with expectation awaited in the two front rooms the advent of the groom and bride. In one of the back rooms, where were gathered the attendants and the two families, the following conversation ensued:

Hartwell.—"Mrs. Ardis, I must ask your pardon for the only untruth I ever told. My true name is Hunter Randolph."

Mrs. R.—"My son, Mrs. Ardis."

Kate.—"My brother, Mrs. Ardis."

Mrs. Ardis.—"And pray, ladies, is it your purpose to insult the distress of a mother who has been overruled and compelled to witness the marriage of her daughter to an unknown adventurer, who may turn out a Carpet-Bagger?"

Hunter Randolph, (rolling up his sleeve).—"Mrs. Ardis, can you tell who made that mark?"

Mrs. Ardis.—"Well, it is Hunt Randolph, as sure as I live."

When Hunter Randolph was a small boy he received a severe cut on the fleshy part of the arm, between the wrist and elbow. Mrs. Randolph, of course, would be satisfied with nothing short of the skill of Dr. Ardis, her family physician. On leaving home one morning, that gentleman told his wife, in the event Mrs. Randolph sent a servant for medicine, to get an ounce phial off of a certain shelf in his office and send it to that lady, telling Mrs. Ardis, at the same time, that it was opium dissolved in spirits of turpentine. Mrs. Ardis sent what turned out to be Indian ink, which cured the wound but left an indelible black mark.

Reader, if it ever be your good fortune to visit the Plateau, you will meet with the warmest welcome, and be made a witness to Hunter Randolph's unsurpassed skill as a planter, and to Julia's superior excellence as a housekeeper; but if you go with stick and wallet, nothing short of a mark put upon you by Mrs. Ardis herself will ever convince that good lady that you are not a Carpet-Bagger in disguise.

Railroad Schedule.

Central Railroad Passenger Trains.

Leave Macon.....	7 00 A. M.
Arrive at Savannah.....	5 30 P. M.
Leave Savannah.....	8 00 A. M.
Arrive at Macon.....	6 40 P. M.
Connects at Millen for Augusta.....	12 50 P. M.

Night Passenger Trains.

Leave Macon.....	6 25 P. M.
Arrive at Savannah.....	5 15 A. M.
Leave Savannah.....	7 20 P. M.
Arrive at Macon.....	6 55 A. M.
Connects at Millen for Augusta.....	11 50 P. M.

Macon & Western Railroad Passenger Trains.

Leave Macon.....	7 55 A. M.
Arrive at Atlanta.....	2 10 P. M.
Leave Atlanta.....	7 55 A. M.
Arrive at Macon.....	1 40 P. M.

Night Freight and Passenger Trains.

Leave Macon.....	8 50 P. M.
Arrive at Atlanta.....	4 46 A. M.
Leave Atlanta.....	7 18 P. M.
Arrive at Macon.....	3 23 A. M.

Southwestern Railroad Passenger Trains.

Leave Macon.....	8 00 A. M.
Arrive at Eufaula.....	5 30 P. M.
Leave Eufaula.....	7 20 A. M.
Arrive at Macon.....	4 50 P. M.

Connects with Albany branch train at Smithville, and Fort Gaines branch train at Cutbert.

Eufaula Night and Accommodation Trains.

Leave Macon.....	8 25 P. M.
Arrive at Eufaula.....	11 00 A. M.
Leave Eufaula.....	7 18 P. M.
Arrive at Macon.....	9 10 A. M.
Connects at Smithville with Albany train on Monday, Tuesday, Thursday and Friday nights. No train leaves on Saturday nights.	

Columbus Passenger Trains.

Leave Macon.....	7 25 A. M.
Arrive at Columbus.....	1 22 P. M.
Leave Columbus.....	12 25 P. M.
Arrive at Macon.....	6 05 P. M.

Columbus Night Passenger Trains.

Leave Macon.....	7 40 P. M.
Arrive at Columbus.....	5 05 A. M.
Leave Columbus.....	7 00 P. M.
Arrive at Macon.....	4 43 A. M.

Macon & Brunswick Passenger Trains.

Leave Macon.....	9 10 A. M.
Arrive at Brunswick.....	9 35 P. M.
Leave Brunswick.....	4 45 A. M.
Arrive at Macon.....	6 10 P. M.

Trains to Hawkinsville.

Leave Macon.....	3 00 P. M.
Arrive at Hawkinsville.....	6 30 P. M.
Leave Hawkinsville.....	7 00 A. M.
Arrive at Macon.....	10 30 A. M.

This train runs daily, Sundays excepted.

Georgia Railroad Day Train.

Leave Atlanta.....	5 00 A. M.
Arrive at Augusta.....	3 45 P. M.
Leave Augusta.....	7 00 A. M.
Arrive at Atlanta.....	5 30 P. M.

Night Train.

Leave Atlanta.....	5 45 P. M.
Arrive at Augusta.....	3 45 A. M.
Leave Augusta.....	10 00 P. M.
Arrive at Atlanta.....	8 00 A. M.

Day Passenger Trains will not run on Sundays. Passengers for Milledgeville, Washington and Athens must take Day Passenger Trains.

Western & Atlantic Railroad.

Leave Atlanta.....	7 00 P. M., 8 15 A. M., 3 10 P. M.
Arrive at Chattanooga.....	3 30 A. M., 4 20 P. M.
Leave Chattanooga.....	7 50 P. M., 7 00 A. M.
Arrive at Atlanta.....	4 14 A. M., 3 17 P. M., 11 00 A. M.

Cartersville Accommodation.

Leave Atlanta.....	5 30 P. M.
Arrive at Cartersville.....	8 06 P. M.
Leave Cartersville.....	6 00 A. M.
Arrive at Atlanta.....	9 00 A. M.

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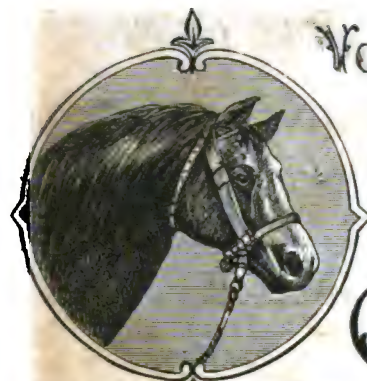
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VOL. I. No. 12.



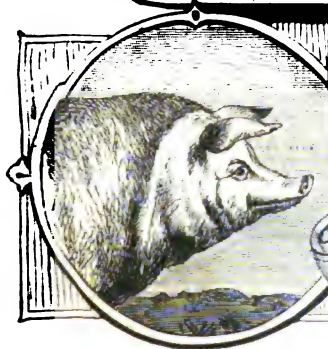
THE
SOUTHERN

FARM AND HOME



OCTOBER, 1870.

W. M. BROWNE, Editor.



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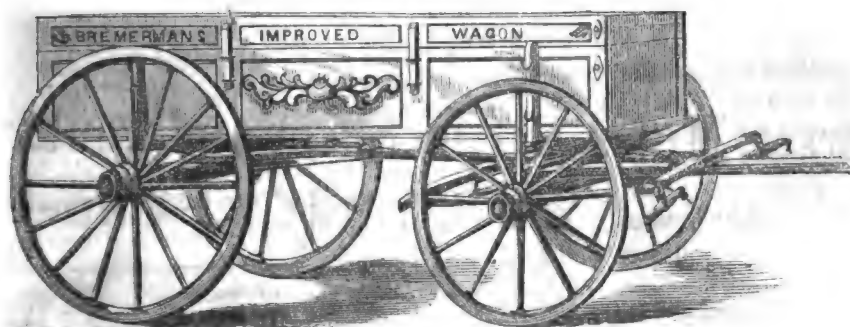
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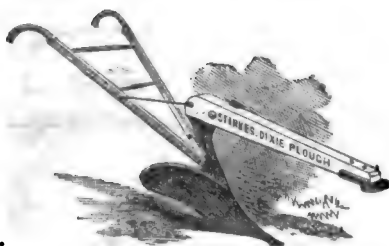
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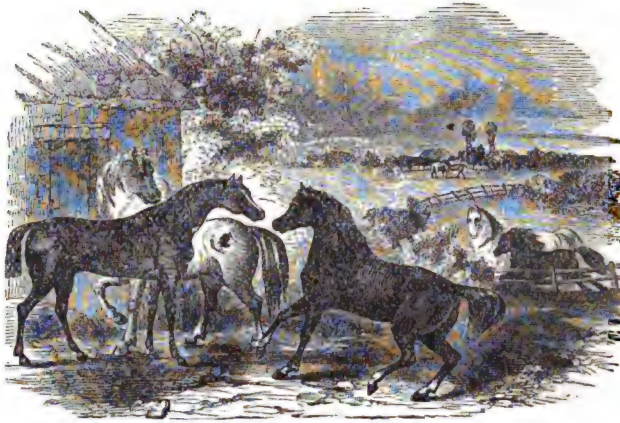
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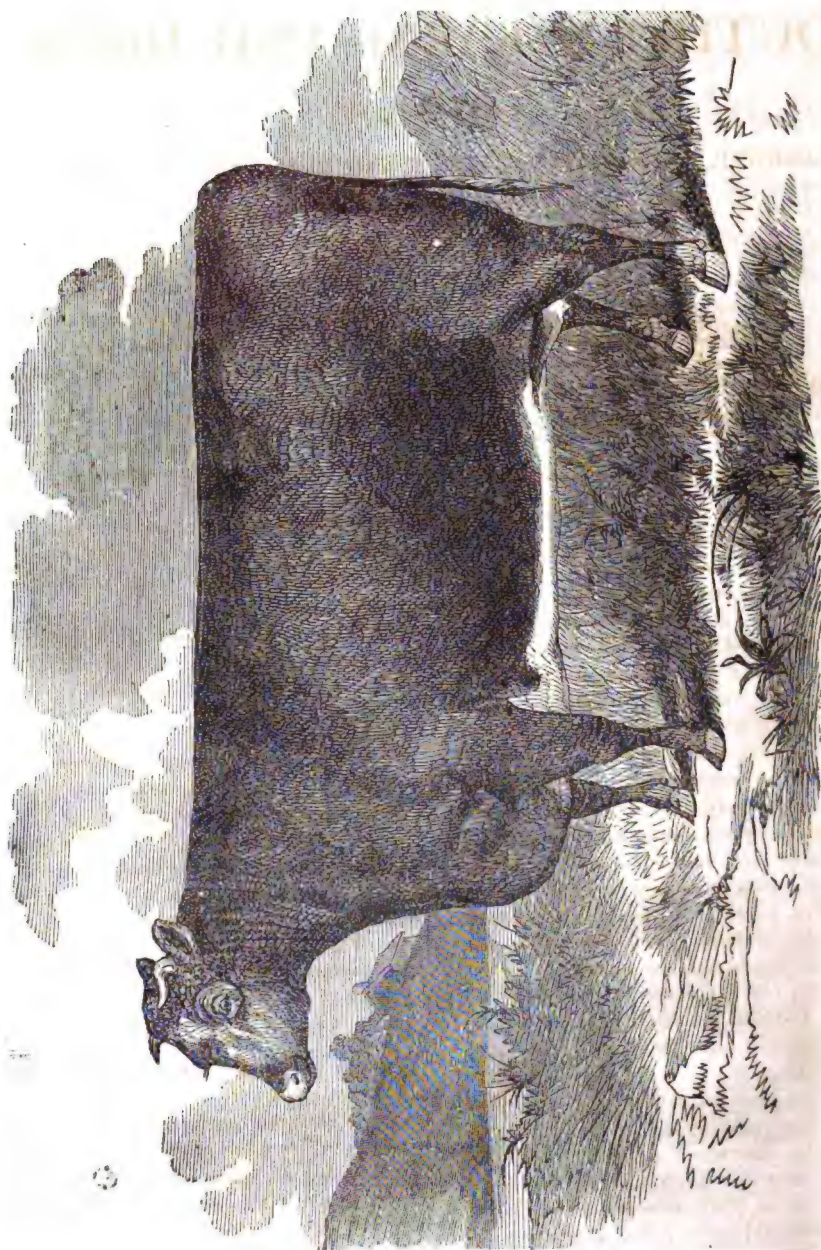
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SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. I.

MACON, GA., OCTOBER, 1870.

No. 12.



FARM WORK FOR THE MONTH.

THE gathering of the cotton crop is still the principal object of the farmer's care, absorbing nearly all his time, and needing all his attention. Every fine day should be devoted to this important work. As fast as the cotton opens it should be picked, and not left upon the stalk to fall out, become discolored, and waste, until, as is often said, "we can get round to it."

Prompt, clean picking, skillful handling, and good ginning, will always be found to pay well; whereas, on the contrary, farmers lose many a dollar by the slovenly, careless manner in which they gather a crop which has cost them so much trouble, labor and money to make. Let no hulls, trash, or leaves be gathered with the cotton. In fast, hurried picking they are almost unavoidable, but they depreciate the staple, and consequently depreciate the value. It is very probable this year that buyers will be unusually fastidious, and that the discrimination in favor of fair cotton will more than pay for the labor of clean picking.

If the cotton be picked damp it is very desirable that it be carefully sunned before it is put away in bulk, otherwise it may mould and have its color destroyed. Every good farmer should have a capacious platform attached to his gin house, and should see to it that all cotton picked in the early morning, and after wet weather, be well aired and dried in the sun before it is put away in any quantities.

GATHERING THE CORN CROP.

Corn does not suffer as much as cotton from
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exposure to the weather, but it does suffer both in quantity and quality if allowed to remain in the field. The sooner it is gathered and carefully secured in good cribs the better. There are many days when the cotton is too wet to pick, when corn can be gathered without any injury to it. We do not recommend that corn be put away in the cribs in large heaps when the shucks are damp, although some people pretend that the heating which corn thus housed will undergo will destroy the weevil without damage to the grain.

We also recommend that all corn cribs be supplied with good locks. It is astonishing how they make a pile of corn "hold out."

PEAS.

Whenever a spare hour presents itself, let it be employed in gathering peas. There is no more wholesome food for man or beast than the field pea. Ground with corn they are the best and strongest food for working horses or mules, and pea meal cooked is beyond all comparison the most milk-producing food for milch cows. Thanks to favorable seasons, the pea crop this year is above an average. Gather all you can, and make the effort to gather them all.

WHEAT.

Towards the middle or end of this month is the best time to sow the early varieties of wheat. We hope that the readers of the FARM AND HOME have all resolved to raise a sufficient crop of this excellent cereal to supply their own wants at least, if they cannot conveniently do more. In those portions of Georgia which are suited for wheat, we are satisfied that in a series of years wheat raising would be found to be more profitable than cotton. The acreable return for one year might not sustain this opinion, but when the amount of labor and expense necessary to raise wheat is compared with that

required for the culture of cotton, and when the benefit to the land, the time saved to collect and make manure and generally improve the soil, are all taken into the account, we doubt not that our belief is correct.

We do not mean, by raising wheat, sowing three pecks or a bushel of any sort of seed upon a rough, unbroken and grassy field, and then scratching it in with a scooter plow. But we mean preparing the land thoroughly by deep, close, even plowing, so that it be perfectly pulverised and deeply broken; we mean liberal manuring with cotton seed or richly ammoniated superphosphates; we mean sowing in drills about half a bushel per acre of the best and cleanest seed that can be found; and we mean covering it carefully and then rolling with a well adjusted horse-roller.

We have found the white Tappahannock wheat to be better than any other variety we have seen.

As a preventive against smut, the seed should be soaked in bluestone water or strong brine for twelve hours, and then rolled in lime or plaster. The old advice, to "sow wheat in dust,"—that is, when the ground is thoroughly dry,—may be followed with the best advantage.

BARLEY AND RYE.

Those who have hitherto neglected to sow a barley or rye patch should not lose another moment. There is nothing about a farm which "comes in handier" or pays better than these patches. It is entirely useless to attempt to raise barley either for pasture or seed on poor ground. If you are liberal in manure, prepare your ground well, sow a couple of bushels of seed per acre, and cover nicely, you will rarely fail to have an excellent winter pasture, which will prove a most timely and efficient auxiliary to the corn crib and the fodder stack.

OATS.

Again we earnestly recommend our readers to sow largely of this admirable grain. It is not yet too late, though it were better that the sowing had been completed last month. The same remarks as to the care in the preparation of the ground for wheat, apply to this crop.

SWEET POTATOES.

As soon as the first frosts have nipped the vines, the sweet potatoes should be dug. It does not do to wait until the vines are killed, because in that case the frost has penetrated the earth and caused many of the potatoes to rot. As to the best mode of saving and banking, see

article in another column copied from our April number.

CLOVER AND GRASS SEEDS.

During this month, and in the early part of the next, is the best time to sow clover and the grasses. It is better to sow them with either wheat or barley, but they are frequently sown alone.

Will those who believe that Dr. Voelcker is "an old humbug, who don't know nothing of farming in Georgia," and who have no faith in the fertilizing properties of clover, make the experiment for themselves on a small scale this year? Just try one acre.

PLANTATION MILLS.

We advise those farmers who live at a distance exceeding a mile from a town, and who have Bottoms', or some other good adjustable horse-power, to buy a plantation mill and grind their own meal. The saving in toll will soon pay the cost of the mill, not to speak of the loss of time of men and animals hauling the grain to the mill and hauling back the meal.

COTTON SEED.

As you proceed with the ginning, save with utmost care your best seed for planting your next crop, and save the rest for sale or for manure. In no case let any be exposed to the weather. Even those intended for manure are deprived of half their fertilizing properties by exposure during the winter.

For the Southern Farm and Home.

Cotton Crop of 1869, and Duty of Cotton Planters.

Mr. Editor: It seems that the cotton crop of 1869 foots up some 3,500,000 bales, and believing cotton buyers (both speculators and manufacturers,) in estimating the prices they are willing and can afford to pay, look only to the number of bales produced, without any regard to weight, etc., it becomes us as planters to pay a little more attention to the question of supply and demand.

Now let us look a little into the cotton crop of 1869, and what do we see? We see an enormous crop, so far as the number of bales is concerned, but, Mr. Editor, is it not a notorious fact that the weights of the bales last year were *extremely* light? And if the bales had been properly packed, do you think the crop would have very materially exceeded the crop of 1868? Will the last year's crop average 400 pounds per bale? And is not a bale of cotton

generally estimated at 500 pounds? If so, let us apply it to our last year's crop and see the result :

Lbs. produced in '69.	Average Bale.	No. Bales.
1,400,000,000	400	3,500,000
1,400,000,000	500	2,800,000
		700,000

Thus we see had the crop averaged 500 pounds per bale, as it should have done, the crop, instead of footing up 3,500,000 bales, would have amounted to only 2,800,000 bales—a difference of 700,000 bales—and we see we have seemingly added twenty-five per cent to amount of crop produced by our careless packing, and “*trying to make bagging and ties pay.*”

Now let us take another standpoint and see if we can't make another considerable reduction in the seeming number of bales produced, for in this section, (and I presume it was the general practice) the bagging and ties on last year's crop approximated some thirty pounds per bale; and as we have already reduced the crop 700,000 bales by consolidation, we must also deduct thirty pounds per bale from the bagging and ties on the 700,000 bales from the crop, as before found, of 2,800,000 bales: 700,000 bales cotton at 30 pounds per bale, 21,000,000 pounds—21,000,000 pounds equivalent in weight to 42,000 bales cotton: 2,800,000—42,000=2,758,000 bales crop of 1869.

Thus, from the second calculation, the crop is reduced to 2,758,000 bales, which will very little exceed the crop of 1868, as the bales of that year were of very good weight.

Can we not still reduce the crop a little lower? For the last two or three years we have been using about 8 pounds per bale of surplus bagging on our crops, and let us see to what extent that will still reduce the seeming crop of 1869: 2,758,000 bales, 8 pounds surplus bagging, 22,064,000 pounds—22,064,000 pounds is equivalent to 44,128 bales cotton—2,758,000—44,128=2,713,872 bales as crop of 1869. Thus we now have the crop of 1869 to foot up only 2,713,872 bales.

Now, Mr. Editor, do you not think it to the interest of the cotton planters to see that their bales are uniform and of full weight? I know when cotton commands a high price surplus bagging pays a good per cent on itself, but does it benefit the price of cotton? I believe not, but, on the contrary, think it causes each bale to loose enough to buy the bagging and ties on two or three bales, if properly packed. I have frequently, during the packing of last year's

crop, heard planters tell their hands to “*throw it in—it makes no difference if the bales are light—bagging and ties pay mighty well;*” but if they will give the matter a careful study they will see “*bagging and ties pay mighty well*” “*over the left.*” One other cause of so many light bales being packed, is owing to the fact that a great many planters are trying to make that fifty, one hundred, or five hundred bales, and if they are unable to get it by weight, they gain the assistance of numbers by putting up their crops into pockets.

Let us look a little into this bagging business, and see what we could have saved from our last year's crop by proper baling our cotton. We have shown that, from the crop as estimated for 1869, (which I think a fair one,) we have a surplus of 43,064,000 pounds of bagging and ties, and will any one doubt if that amount had been thrown upon the market bagging and ties would have been a mere drug?

Now, sir, look at the bagging prospect for our present crop. It is estimated that the price of bagging will be at least ten or fifteen cents per yard in advance of last year's prices, and why? Simply from the fact, our Commissioner of Agriculture gives us an opportunity of making some 4,000,000 bales, if we have the best of seasons in which to make it; and the manufacturers of and speculators in bagging, knowing our propensity for killing our cotton crops with bagging, have advanced their prices, and are quietly awaiting the season to approach when they will pocket their share of our hard earnings, which we not only cheerfully give but beg them to take, as “*bagging and ties pay mighty well.*” They also know if we can make 3,000,000 bales of cotton, we can soon convert them into 4,000,000 pockets, for, as all cotton planters seem to know, “*bagging and ties pay mighty well.*”

Another cause of the high price of bagging, and one over which we can have no control the present year, is its vast consumption by shippers of grain; and our only way of stopping this leak is to make our farms self-sustaining, more especially in the bread line, and let us hope that every planter who does not make a sufficient provision crop this year will sow down an abundant crop of small grain, and see that his corn crop is sufficiently extended next year so as not only to make enough for home consumption; but have a little to spare; and by so doing, and properly preparing his cotton for market, he will soon see that *not only will* “*bagging and*

ties pay mighty well," but cotton will begin to pay a little too.

We notice also that a great quantity of commercial fertilizers is annually wasted by the planters, and in some instances fully three-fourths of their fertilizing properties are lost to the crop, caused chiefly from over-cropping, and thereby enabling the grass and weeds to get the full benefit of the fertilizer, to the great injury of the cotton plant, and consequently causing a great many planters to become prejudiced against the use of them; while, on the other hand, combined with what manures we can make at home, they will prove a great blessing if properly used. The only way in which we can declare good dividends is by the economical use of labor, with the aid of pure Commercial Fertilizers and what manures we can save on our farms; and how is this to be effected? *Plant a small area, fertilize highly, cultivate thoroughly.*

I notice, Mr. Editor, a great many sound arguments in the columns of your valuable journal on the provision question; and here let us make a little calculation and see if we can detect any difference in the profits of Mr. A., who plants all cotton, and Mr. B., who plants one-half in cotton and devotes the rest of his farm to the provision crops; and to make things doubly sure, we will give Mr. A. the benefit of twice the amount of land under cultivation:

Farm of Mr. A.—200 Acres under Cultivation.

	Dr.
Guano for 200 Acres, 20 tons, at \$30.....	\$1,600 00
Corn for 5 Mules, 500 bushels, at \$1 75.....	875 00
Hay for 5 Mules, $8\frac{1}{2}$ tons, at \$55.....	343 75
Wages of 12 Hands, at \$150.....	1,800 00
Meal for 12 Hands, 156 bushels, at \$1 75.....	273 00
Bacon for 12 Hands, 2,184 lbs., at 20 cents.....	431 80
Implements and Incidentals.....	300 00
Bagging and Ties for 75 bales Cotton.....	300 00

Total expenses.....\$5,928 55

	Cr.
By 75 bales Cotton, 37,500 lbs., at 15 cents.....	5,625 00
2,625 bushels Cotton Seed, at 20 cents.....	525 00

\$6,150 00

Less expenses.....5,928 55

Clear Profit of Mr. A.....\$ 221 45

Farm of Mr. B.—100 Acres under Cultivation, and 100 Acres Resting.

	Dr.
Guano for 100 acres, 15 tons, at \$30.....	\$1,200 00
Corn for 4 mules, 240 bushels' at 75 cents.....	180 00
Fodder for 4 mules, $3\frac{1}{2}$ tons, at \$15.....	52 50
Wages of 6 Hands, at \$150.....	900 00
Meal for 6 Hands, 78 bushels, at 75 cents.....	58 50
Implements and Incidentals.....	200 00
Bagging and Ties for 40 bales Cotton.....	160 00

Total Expenses.....\$2,751 00

	Cr.
By 40 bales Cotton, 20,000 lbs., at 20 cents.....	\$4,000 00
1,400 bushels Cotton Seed, at 20 cents.....	280 00
40 acres, 1,000 bushels Corn, at 75 cents.....	750 00
40 " 8 tons Fodder, at \$15.....	120 00
2 " 600 bushels Potatoes, at 50 cents.....	300 00

By 8 acres, 200 bushels Wheat, at \$1 25.....	250 00
300 bushels Field Peas, at \$1 50.....	450 00
	\$6,150 00
Less Expenses.....	2,751 00
	\$3,399 00

From the above calculation and estimates, which can be proven correct, we see that while the profits of Mr. A., who plants all cotton, amounts to the pitiful sum of \$221 45, Mr. B. feels at home with his profits of \$3,399, made on one-half the amount of land cultivated by Mr. A., and probably with one-tenth the amount of vexation and trouble; and at the same time Farmer B. can ride over his hundred acres at rest, and with pleasure behold the vast amount of vegetable matter growing on the same for the benefit of his future crops and the permanent improvement of his soil; while Mr. A., besides making such a signal failure in his farming operations, also sees his land rapidly going down hill, by being exhausted of all vegetable matter.

Now, Mr. Editor, some of those planters who have "cotton on the brain," (and I confess I have been one of that stripe,) will say my calculation is by no means a fair one—that I give Mr. B. the benefit of 20 cents for his cotton, while I give Mr. A. only 15 cents, and that Mr. B. makes too much cotton per acre in proportion to the amount Mr. A. makes. Also, that I charge Mr. A. \$1 75 per bushel for corn, \$55 per ton for hay, and 20 cts. per pound for bacon, while I charge Mr. B. only 75 cts. per bushel for corn, \$15 per ton for fodder, and make no charge at all for bacon. Let us ventilate these charges a little. All farmers know that cotton makes best on land upon which a system of rest and rotation is kept up, and as Mr. B. has the benefit of said rest and rotation, besides a greater amount of fertilizers per acre, and as he is in a position to thoroughly prepare his land and cultivate his crop, we cannot see why forty bales on fifty acres should be considered such an extraordinary crop, while if we look at Mr. A.'s plan, we can see that to cultivate all cotton the crop must be neglected to a considerable extent, thereby enabling the grass and weeds to get the benefit of the fertilizers; and, besides, the land, being exhausted of vegetable matter for want of rest and rotation, is not in the condition to make a crop of any kind, and we think we have given a very high estimate of Mr. A.'s crop, even in proportion to the amount that B. makes.

Now about the other charges: Suppose the Southern planters would all plant on Mr. A.'s

plan, do you suppose you could buy corn for \$1 75 per bushel, hay at \$55 per ton, and bacon at 20 cents per pound? Most assuredly not. On the other hand suppose every planter would adopt Mr. B.'s plan, do you think you would get 20 cents per pound for cotton? I think cotton would not bring 20 cents, but think 20 cents would be its lowest limit, while if Mr. A.'s policy was universally adopted, we could with difficulty get 8 or 10 cents per pound. What do you suppose would be the price of corn and fodder if Mr. B.'s policy is pursued by every planter? It would be difficult to find sale for same at prices placed to Mr. B.'s debit and credit. You say I do not charge Mr. B. with any bacon. Of course not; it is presumed a planter of Mr. B.'s stripe raises his own bacon, and as I do not give him credit for the same, I certainly make no charges; and as you seem so determined to try and find a flaw in Mr. B.'s plan, I will farther say to you that there is another item of considerable importance to be placed to Mr. B.'s credit, viz: he has an abundance of good, rich milk, butter, poultry, eggs, etc.; while Mr. A. is ekeing out a miserable existence on a little meal at \$1 75 per bushel and bacon at 20 cents per pound, besides having his stock in a miserable condition, and his mind in a worse one.

Come now, planters, can we not follow Mr. B. a little while? Have we not already seen and experienced the folly of Mr. A.? If we wish to build up our financial condition, let us, at once, adopt Mr. B.'s policy. Our interests require it. Patriotism demands it.

Near Perry, Georgia.

REFORM.

Under-Draining.

IN England, in Belgium, in Germany, and in every country where scientific agriculture is practiced, under-draining is universally regarded as an essential element of success. On one farm in Scotland, which does not exceed five hundred acres, there were over four hundred miles of drains, several years ago, and the work was not then regarded as complete. And the Scotch farmers are practical people, who understand the value of money, and rarely make expenditures which do not pay and pay well.

Before the American farmer can pretend to a knowledge of scientific agriculture, he must understand the value of under-draining, and now that the Southern farmer no longer finds it profitable to exhaust his land and then buy "new ground," they too must learn the immense profit to be derived from under-draining.

Many believe that if they subsoil their land, they do all that is necessary, but this is a great mistake. Though the subsoil plow may open up the soil to a greater depth, it affords no cure for the deficiencies of the subsoil, and can never take the place of under-drains. Professor Johnson, Tull, and all the eminent writers upon improved agriculture hold this opinion.

Now, what are the advantages of under-draining—how will a farmer who makes the necessary expenditure get back his money?

We answer: Under-draining carries off all stagnant water, and prevents surplus water in the soil from coming to the surface. It allows the water as it falls to filter through the soil, leaving innumerable small pores, and having a chemical as well as mechanical effect upon it. It conveys the plant food contained in rain direct to the roots of the plants. It enables the fresh air to circulate through the mass of delicate tubes or porous cells which it creates in the soil. It removes all sourness, and makes the earth more friable and more easily worked. It is equal to an increase of one or two degrees in the temperature of the soil by removing the stagnant water, and the coldness which stagnant water creates. It causes crops to mature fully two weeks earlier in the fall, and enables the farmer to commence his operations fully two weeks earlier in the spring, thus adding four weeks to the crop season. It adds incalculably to the advantages to be derived from the use of artificial manures, many of which are of no benefit whatever when applied to land where the water is allowed to stagnate. The chemical effect of under-draining is also very great. It is fully demonstrated that the removal of stagnant water and the free admission of fresh air in its stead, facilitates the decomposition of organic matter in the soil, as well as the disintegration of the mineral matter, making both immediately fit for plant food. These are among the leading advantages of under-draining. Then, as to how it will pay, we say that the produce of thoroughly-drained land will exceed that of undrained fully one-third in an average of five years, and that supposing that the whole work of draining to cost from \$20 to \$30 per acre, it is clear that the increase of the crops by the end of the second year, will more than cover the cost.

In future articles we expect to give detailed information as to the construction of drains, the materials to be employed, and the probable cost.

For the Southern Farm and Home.

The Agricultural Convention—The Constitution of the Agricultural Society.

LETTER FROM JOHN PLOWHANDLES.

Mr. Editor: I was much pleased with the Agricultural Convention which met in Atlanta on the 17th of August. I was proud of the agriculturists of Georgia when I looked at the large body of intelligent, earnest, and high-toned men who were assembled there to promote the agricultural interests of our noble old State, representing as they did every section and every class, and brought together from the mountain steep to the sand-beach washed by the Atlantic, to advance the glorious work of "Agricultural improvement." The fact that so many men could be induced to leave their homes at that season of the year and spend three or four days, from morning until late at night in a hot, crowded assembly, or in a still hotter and more crowded hotel, proves in itself that the people are in earnest, and gives us good ground to hope that having put their shoulders to the wheel of progress, they are resolved to push on until they reach the goal—until our whole country shall smile under the thickly-clustered fruits of an improved and scientific system of agriculture.

I do not specially admire the Constitution which was adopted for the government of the Society. I think it is too cumbrous, complex, and involved, and I can find no better proof of this than the fact that its author and finisher has already given written notice of a motion to amend it in one of its most important features. It would have been much better had the Constitution contained nothing but the name of the Society, the qualifications and privileges of membership, the Executive officers and their duties, and had the adoption of such by-laws as might be found necessary been left to the wisdom of the Executive Committee. The present Constitution is what may be called a "comprehensive document," and like all such documents, is unintelligible, confused, and perplexing. By its provisions, the only income of the society is the tribute which the County Societies are to pay in the shape of a few cents per head of their membership, the fees paid by life members, and the annual dues of those members who were already on the roll at the time of its adoption. In theory, this provision is very beautiful. Were there a society of a hundred members in every county,

and were each society eager to pay the required tribute in order to acquire membership and legislative authority in the State Society, nothing could work better. The parent society would have an ample revenue, and the law-making and governing power would be so evenly and jointly diffused as to render the combinations of cliques and rings, either in the interest of individuals or private schemes, entirely impossible.

How many County Societies are there in the whole of Georgia? How many of these have one hundred, fifty, twenty-five paying members? If every member of every existing society were to pay the required tribute of fifty cents per capita of its membership, does any body suppose that the aggregate of these payments would pay the salary of even one of the paid officers of the Society? And when it is known that representation in the State Society involves the payment of an assessment, which shall not exceed fifty cents per head of the membership, is it supposed that this tax will stimulate the already slow growth of County Societies, and make a connection with the State Society more popular? I doubt it very strongly. I know how a few earnest men have labored for months and borne all the expenses to build and keep up the few sickly, struggling little clubs which now exist. I know how difficult it is to collect the few cents which are required from members, and I feel assured that when, in January next, the Secretary of the State Society comes to prepare the roll of tributary societies, in order that the Executive Committee shall make the assessment, he will not require the services of a clerk, or more than one small sheet of paper, to complete his list.

What we need is to encourage and not tax the formation of county and neighborhood societies. The State Society should rather contribute to than draw from the treasuries of such societies; and though the tax of fifty cents per head seems to be very small, it is well known to all who have any practical knowledge on the subject, that several of the members of several of the little societies which have just been brought to light under the kind influence of one or two enterprising individuals, cannot afford and will not pay the tax.

The plan will not only be a failure as a means of income for the State Society, but it will prevent the growth and welfare of the County Societies.

In those States where agriculture is most advanced and most interest is felt in its progress,

endowments, not imposts, are made to encourage the growth and increase the number of the neighborhood clubs. In those States the Legislatures appropriate liberally for the advancement of agriculture, and this is exactly what the Georgia Legislature must do before we can expect any rapid progress.

I liked Col. D. C. Barrow's resolutions very much. They hit the right nail on the head. They told the truth, and had they been adopted there is not a single aspirant for a seat in the Legislature, at the ensuing election, who would not have expressed his willingness to vote for a liberal money appropriation for the support of the State Society.

I hope that Mr. Barnett's memorial will be successful, but I know that the adoption of Col. Barrow's resolution would have proved so. I liked very much that other part of those resolutions which referred to the encouragement of the County Societies, namely that which gave each County Society a right to draw from the county treasury a sum equal to that raised from its membership. By such means as this these societies would have sprung up in every county, and they would have been healthy, vigorous, hopeful, and efficient from their very birth, and they could have paid the tribute to the State Society.

It has been and now is hard enough to get the planters and farmers of a neighborhood to agree to form a society at all, but when you tell them that they must pay their own dues to their society and then pay fifty cents a piece to the State Society, I fear that the task of those devoted and earnest men who are laboring for the good cause will be much more difficult, and their progress much more slow.

The Constitution is crude, ill-digested, confused, prolix, and unsatisfactory. But it can be amended, thank goodness, and what is more it shall be amended. The State Society shall be handsomely endowed by the Legislature, and have the means not only to insure her own efficiency but help to promote that of the lesser associations.

If farmers will only do their duty to themselves and their country by exerting their legitimate influence, the honest need of agriculture will assuredly receive the help which has been so long unjustly withheld, and which has been so lavishly granted to the illegitimate greed of individuals and corporations.

Respectfully, yours,

JOHN FLOWHANDLES.

For the Southern Farm and Home.

Mixed Crops vs. All Cotton.

THE general principle that mixed crops are more profitable than "all cotton" is undoubtedly true. Thirty years practical experience and observation make me know it. A number of communications have appeared in which the writers go into statistics, which are generally correct, yet none that I have seen are free from important errors. These may mislead and injuriously effect persons new to the business of farming in the older cotton States.

Recently I read in the FARM AND HOME an article from Dr. E. Hatcher, an intelligent and practical planter. In summing up, he gives the difference in profits of a stated number of acres of a mixed crop over the profits of an all-cotton crop, at \$3,492. One of the items from which this profit is derived is two thousand bushels of corn from one hundred acres of land. I think Dr. H. would, upon reflection, acknowledge that he had never known or heard of one hundred acres of *upland* on one plantation in Middle Georgia averaging twenty bushels to the acre. On the contrary, he would admit that twelve bushels per acre of measured corn on one hundred acres would be a remarkable yield.

I owned the best plantation in Burke county, and my corn was always manured with cotton seed and well cultivated, and yet an average of twelve bushels was never exceeded. Of Dr. Hatcher's profits this strikes off at once \$1,450, or nearly one-half. So, also, of peas, the price of which, whenever many are planted, never exceeds one dollar per bushel.

There is a fundamental error in all these calculations. If only a few persons in Georgia were to plant mixed crops, the prices laid down might be obtained, but when all men plant corn enough to answer their wants, it will not bring fifty cents per bushel. In the cotton belt of Georgia no man can make money by *selling* corn as a source of income. But he may make money from cotton *if he does not have to buy corn*, and this is the whole of it.

Thirty years experience satisfies me that there is no *general* crop of anything but cotton, that we can plant and accumulate money, and this fails also if we have to spend the proceeds for corn, meat, flour, syrup, rice, and many other things that every farmer can make here if he will. In this view, the subject needs more elaboration than my health will permit me to give it. I only hope that Dr. Hatcher, and many others, will continue their righteous war against our suicidal policy.

RICHMOND.



Wheat Culture.

THE success which has attended the culture of wheat in different parts of Northern and Middle Georgia during the past few years, where an improved system of tillage has been adopted, proves beyond a question that if our planters adopt a rotation system—the only one by which they can maintain and improve the fertility of their lands—wheat is one of the most important and most profitable crops they can raise. The experiments of the Athens Wheat Club, of Mr. Samuel Bailey, of Maxey's, and others, who, on naturally poor land, by thorough preparation of the land, liberal manuring, and careful selection of seed, raised crops exceeding the largest yields of the best wheat-growing States in the Union, are the best evidence of what we can do if we try.

Of the crops raised by the competitors for the Silver Pitcher at Athens, the largest yield per acre was 45½ bushels and the lowest 20 1-7 bushels, and most of the others exceeded 30 bushels.

To achieve like results, like care must be taken in the preparation of the land. By close, deep plowing it should be made fine and mellow, but not too loose and open, as is frequently the case with stubble land. Soil for wheat cannot be too fine and comminuted, but it must be worked down to make a good seed bed, and this is best done by the harrow or roller. Where stubble is plowed under, if the work has been done closely and sufficiently deep to turn the stubble under completely, we would recommend that the rest of the preparation be done by the harrow, finishing off with the roller. Cross-plowing stubble, where the stubble is not completely rotted, often makes the land too loose, and more likely to heave with frost than where the seed bed has been "worked down." But let it be understood that the land must be thoroughly broke and pulverized first. Scratching the surface, and leaving a hard impenetrable pan underneath will not leave the seed bed we desire. Where land which has been in corn this year is designed for wheat, as soon as the corn is removed it should be plowed as closely

as possible with a good two-horse turn-plow, and if the turn-plow be followed by a Brinly subsoiler so much the better. We repeat that the soil cannot be too finely comminuted or to too great a depth. Then it should be well-harrowed with a heavy harrow of any of the approved patterns, and if there be plenty of time a cross-harrowing would be very beneficial.

The manures for wheat which we believe to be the best are green cotton seed, from seventy-five to one hundred bushels per acre, which can be strewn over the land and plowed under at the first plowing, and a mixture of Peruvian guano and dissolved bones, say one hundred pounds of the former to two hundred pounds of the latter, with about fifty pounds of salt added, sown broadcast and incorporated with the soil by the first harrowing, or in case the land be cross-plowed, turned under by the plow. We are satisfied, from our own experience, that there is no better manure for wheat than cotton seed, at the rate of fifty to seventy-five bushels per acre, turned under when the land is plowed, and about two hundred or two hundred and fifty pounds of the above mixture applied just before the seed is sown.

We have no hesitation in recommending that the seed be sown in drills, from a foot to sixteen inches apart. Not only does the drilling save half the seed, as compared with broadcast sowing, but it gives room for the roots to spread, admits a free circulation of air round the plants, and allows the ground to be cultivated and all foreign growth destroyed. It is also pretended by experienced wheat growers that drilled wheat is much less liable to rust than that sown broadcast.

There are several excellent grain drills which will do the work well, and which can be bought at reasonable prices from any of our agricultural warehouses. Most of them have what is called "a guano attachment," that is, it is pretended that they distribute the fertilizer evenly in the drill, and at the same time drop the wheat and cover it up. We do not believe in the "guano attachment;" first because no drilling machine that had it which we have ever seen, fulfilled its promise of distributing the manure evenly in the drill; and, secondly, because we have very little faith in manuring in the drill, except it be perhaps for root or vegetable crops. For grain crops with fibrous roots extending in every direction, drill manuring will give them a vigorous start, but when the roots extend beyond the narrow line of the manure deposited in the drill, where are they to

find food? We are as satisfied as we are that light, air, and moisture are essential to plant growth, that manuring in the drill will never produce a full crop. It is a make-shift at best which is of course better than no manure, but not as beneficial as if the fertilizer were strewn evenly over the land and then thoroughly intermixed with the soil.

After the drill, to complete the operation, we would go over the field with a heavy roller, by which the compact seed bed of fine soil will be made, and the surface of the field made even.

The seed should be carefully cleaned, all the small and imperfect grains, and all cockle and cheat removed, and then soaked for twelve hours before sowing in bluestone water or strong brine.

Those who believe that wheat is "an uncertain crop," or that it does not "thrive this far South," will, we think, change their minds, if they will only try to cultivate it in the manner we have attempted to describe in the foregoing pages, and by which in a succession of years, on naturally poor worn-out land, we have raised good crops, going as high as 42 bushels per acre in 1868.

Smut in Wheat.

MR. A. G. PESOY communicates the following to the *Rural New Yorker*:

Having read in the *Rural New Yorker* the answers to prevent smut in wheat, by Mr. Fuller and Mr. Curtis, I must say that my experience does not confirm their opinions. In 1841, I purchased a farm in the town of Lyons which had been cleared twenty-seven years, and cropped twenty-four, as I learned after my purchase, from some of the neighbors. Said land had never been seeded to red clover, except an orchard, which I sowed with plaster, at the rate of two bushels per acre. Said orchard was mowed and then plowed, and then sowed to wheat, as well as other portions of the farm, in the fall of 1842. As the crop of wheat in said year was very full of smut, and produced but ten bushels per acre, I determined to get rid of the smut at once. I brined and heavily limed every bushel that I sowed, supposing that there would be a perfect cure, as I had read many times that no smut would grow after such treatment.

Behold the result! Where the clover and plaster were sown, it was perfect wheat; not a smut head could be seen; but on all of the other land there was thousands of heads that were completely filled with smut, many of them not over sixteen inches high.

The land was sandy and gravelly loam, and after it had once been seeded with clover and plastered at the rate of two hundred pounds to

the acre, the smut disappeared. I have no doubt but the brining and liming of wheat is of value to the preceding crop, but do not believe it will prevent smut, unless the land has been previously filled with nitrogenous food, to aid the proper development of the wheat plant.

In any Weather.

When the weather is wet,
We must not fret;
When the weather is cold,
We must not scold;
When the weather is warm,
We must not storm;

But

Be thankful together,
Whatever the weather.

Lucerne.

THIS valuable forage plant flourishes on fertile soils in the Southern States, and is worthy of greater attention on the part of those who are in want of a rich and nutritious food for soiling purposes. The following is an extract from the proceedings of the Farmer's Club, New York Institute:

Mr. Curtis read a paper upon the value of this plant for soiling. He says of it: "It will grow in the same climate and soil with red clover, but needs stronger land, and, being a native of Southern Europe, requires, to perfect itself, more sunshine and warmth. This peculiarity can be remedied to a considerable extent by a rich soil, a warm exposure and stimulating manures. When furnished with these advantages, its rapid growth, and the amount of lucerne which can be taken off from a small piece of ground is most astonishing. From four to six crops can be cut in one season from the same land. For flesh-forming and nutritive elements, it is superior to red clover, containing 50.7 parts to 41.2 in clover.

Like clover, it covers the ground with a dense shade, thus enriching the soil while the roots strike down into the subsoil to the depth of several feet, defying drouth, and leaving the land in admirable condition for subsequent cultivation. Lucerne resembles clover in appearance, with a smaller leaf, and if left to ripen, has a more woody stem. Would not recommend it to take the place of clover for general purposes, but I do most emphatically endorse it for a soiling plant to meet the great want of the dairyman and stock-breeder. For horses it has special merits; not being soft and washy, they are not liable to scour on it. It is perennial. Once get it rooted, and with a clean soil it will thrive for years, yielding its excessive burdens of richness. The seed is larger than clover seed, and when ripe and fresh, glossy and yellow. They can be obtained of any first-class dealer at fifty cents per pound. The crop may be sowed with grain, rye being the best; but it is preferable to sow alone—from eight to ten pounds of seed to the acre."—*Maryland Farmer*.

COMBAT vice in its first attacks, and you will come off conqueror.

For the Southern Farm and Home.

Is Guano a Clear and Entire Loss to the Cotton Planter ?

Mr. Editor : Without circumlocution, I propose to prove that guano has been a clear loss to cotton planters. The dealers in cotton estimate that there will be made this year 4,000,000 bales. And why do they think so ? They have come to that conclusion from the fact that the farmers have purchased and applied to their cotton such enormous quantities of guano ; and the amount of guano purchased forms the principal data from which they reckon.

The amount of money paid by Southern planters for guano amounts to many millions of dollars—all a clear loss. If we had raised our provisions, and not used any guano, we could not have raised more than two millions of bales, and cotton would to-day, (in spite of the war now raging in France and Prussia) have been worth thirty cents per pound.

Two millions of bales at thirty cents would be worth a great deal more money to the planters than 4,000,000 at 15 cents. If so, we get nothing, absolutely nothing, for 2,000,000 bales that we raise this year, and besides we have millions of money to pay out of these 4,000,000 bales, for guano. We could have raised 100,000,000 bushels of corn as easy as we have 2,000,000 bales of cotton, that we get nothing for. Again, if we had not used any guano, we would have made but 2,000,000 bales, which would have sold in the market for more money than 4,000,000. We could have pocketed the money that the 2,000,000 bales sold for, and no guano bills to settle. If the above be true, and who can doubt it, guano must be a clear loss to the cotton planter. Since the war we have purchased millions of tons of guano, and by so doing, we have worked cotton down from 40 to 16½ cents. Think of the Southern farmers having, in the place of 2,000,000 bales cotton, 100,000,000 bushels of corn, the 2,000,000 bales of cotton worth more money than 4,000,000, and no guano bills to settle out of the proceeds of the 2,000,000 bales, and we will have what would have been the situation if we had pursued that course.

By managing so as to work cotton down from 40 to 16 cents, we have caused our lands to depreciate at least 100 per cent.

This deponent planted all cotton in 1867. One trial satisfied me. I had figured the matter up, and figures told me that I could make more money raising cotton at 20 cents, and pur-

chase my provisions than I could to make small crops of cotton and raise my provisions. When I reduced the theory to practice it did not work out that way. I made a splendid crop of cotton, and yet I saved no money.

In 1868 I planted two acres of corn to one of cotton. I purchased but 1000 pounds of guano. At the end of the year I found I had made some money.

In 1869 I should have made corn enough to do me but for the drought. I fattened meat enough to do my family. The freedmen had to purchase western bacon. I managed so I did not purchase much corn. Owing to the high price of cotton, my crop paid me very well.

In 1870 I purchased twenty-three tons of guano, which cost me \$1,950. I shall make perhaps 100 bales of cotton, and by the time all expenses are footed up, there will be (at present prices of cotton) but little money left in the hands of your humble servant.

I have made corn in abundance and have hogs enough to make my meat. If I had no corn or meat, I could not possibly make buckle and tongue meet. I should, without doubt, be forced "up the spout."

It would have been much better for me to have made but 50 bales of cotton without guano than 100 with it, if every farmer had done the same thing, for 50 bales would have brought more money than 100 bales and the guano out of the 100 bales to pay for. It is plain to see that the guano is a clear loss.

When cotton dropped down to 16½ cents, I began to look for the cause, and after ruminating over the matter for several days, trying to find the cause that had produced such an effect, all at once up loomed guano. I once thought guano was my friend, but experience has taught me that commercial fertilizers have been our worst enemy. Commercial fertilizers have caused us to plant cotton, and cultivate cotton, haul cotton, and ship cotton, until many of us have nothing but cotton, and that is not worth anything hardly, and heavy debts hanging over us for guano, and corn, and bacon. That is exactly, my friends, what guano has done for us. Let us get out of this miserable condition.

All agree that there is but one way to get out, and that is by raising provisions. Not only raise for our consumption, but enough to spare to support the towns and cities. I can remember when the citizens of Macon purchased their supplies from the farmers, and it was delivered to them out of the farmers wagons. They did

not go to a grocery store to purchase such articles as they needed to eat.

Planters, let us "about-face;" plant one-half of our land in corn, the other in cotton, and stop using guano, and all will be well in a short time. Pay particular attention to your hogs, and stop saying that the freedmen steal them. That is so only in a few instances. I have twenty head that are fat, some of them so fat that they can't strike a trot to get out of a freedman's way if he was to try and catch them, and those hogs lie round the quarter now, day and night, and the freedmen never trouble them. I am aware of what becomes of your hogs when they suddenly disappear. They stray off in the woods and perish, and then you cry out, "the freedmen have stolen them."

Stop saying the freedmen steal your hogs, for your hogs are generally so poor the freedmen have no use for them. Don't, my friends, shelter yourselves behind such an excuse any longer. Raise corn and feed your hogs; attend to them closely, and you will have plenty of meat.

Let us all go to work and get the country out of its present embarrassed condition. We owe it to our children. Let us not turn the country over to them in its present situation. In the name of humanity, let us not bequeath such a legacy to our offspring.

Very respectfully,

B. M. BATEMAN.

Near Byron, Houston co., Ga.

REMARKS BY THE EDITOR.—There is a great deal in the foregoing communication of our friend, Mr. Bateman, which we heartily commend. He is a practical farmer, earnest, industrious, and capable, and all he says about raising provision crops instead of so much cotton, and raising our own meat where it is possible to do so, meets our entire approval.

We cannot, however, agree with him in thinking that guano is directly or indirectly the cause of our troubles, or that we could do better without commercial fertilizers. Because many of us have been so foolish as to buy fertilizers on credit, at high rates of interest, to raise a large crop of cotton, to the exclusion of all other crops, and have thereby depreciated the value of cotton below the cost of production, it is not the guano which increased our acreable yield which we are to blame, but our own stupidity in planting so many acres and counting on a high price for cotton to furnish us means to buy meat and bread, instead of raising them. It was not the fault of the guano that it was all

applied to cotton and none applied to corn. All good fertilizers would have fed a big corn crop with the same fidelity that they have nurtured and stimulated a big cotton crop. We never yet saw good, reliable manures applied to any crop in reasonable quantities that they did not increase the yield so as to pay a good interest on the investment. It might have been better for Mr. Bateman to have raised only fifty bales of cotton this year instead of the hundred bales he expects to raise, provided every planter had followed the same proportion, and had raised plenty of provisions. It is very probable that the fifty bales would have brought as much money as the hundred bales will bring. But was it the guano that made Mr. Bateman plant for one hundred bales, when he ought to have only planted fifty?

No, Mr. Bateman, commercial fertilizers are not your "worst enemy." They are your best friend. By their use you can raise fifty bales on fifty or sixty acres of land, which without them would not bring you twenty. By their use you can double your corn crop, and by making one acre produce as much as three without manure, you save the labor which it would require to cultivate the other two acres. As well might you say that a horse is your "worst enemy," if you use him to run races and gamble on his performance, instead of using him for legitimate purposes. Or, as well might you say your money is your worst enemy if you lend it to men promising to pay usurious interest, and who fail to pay their notes at maturity, instead of investing it in safe securities bearing legal interest.

Put the saddle on the right horse. Lay the blame where it belongs, and charge the cotton mania with all the evils which you have unjustly charged to guano.

How to Keep Sweet Potatoes.

[Extract from Records of Maxey's Farmers' Club, published in the *FARM AND HOME* for April:]

Build a house of small poles with open cracks; cut your poles twenty by twenty-four feet long and cover the house with boards, nailed on so as to allow no leaking. In the floor (earth) of the house dig as many holes as you desire to make banks, cauldron-shaped and eighteen inches deep. Make a tube for each bank of four strips of plank, say four feet in length by five inches in width, nailed together on the edges. In these tubes, along the sides at intervals, have fifteen to twenty auger holes; set one

tube in the centre of each of the cauldron-shaped excavations in the floor, and pile the potatoes around it in bank shape until the bank reaches within about six inches of the top. Then cover the potatoes over with broom straw or corn stalks, and on this put a layer of soil six inches thick. If the weather is very cold, put on a little more dirt and plug up the mouth of the tube with leaves or straw, which must be opened, however, as soon as the weather moderates. Every year (after the first) the floor of the potato house should be wet with water before putting up the banks. This is important. No one should be allowed access to the banks except an experienced and careful hand. Of course the house should be carefully locked.

For the Southern Farm and Home.

An Old Subject—Bermuda Grass.

THE value of the Bermuda grass that over-spreads so many of the fields of Middle Georgia is almost incalculable; and yet I must say that I consider it one of the three greatest pests with which I am acquainted—guinea grass being second, and wire grass third. It affords better pasturage than anything growing wild in this latitude. Its nature is rather peculiar: after remaining for many years undisturbed in a particular spot, it will sometimes die out, without any apparent cause. More frequently, though, it will be choked out by "goose grass" trefoil, weeds, bushes, or briars. Even when it does not become entirely extinct under these circumstances it grows small and stunted, affording the poorest kind of grazing.

But, for either of the above named results to happen, the grass must be allowed to remain *entirely* undisturbed. When left thus it spreads very slowly indeed. If a patch a foot square be planted in the middle of a field, on a level, where the rain cannot wash it off, where no stock can tread on it and move it on their hoofs or otherwise, and it be not plowed or touched in any way, but simply left to grow and contend as best it may against its natural enemies, which appear to be every other vegetable than itself—for it is the Ishmael of the vegetable kingdom—in this case I doubt if it would spread ten feet in ten years. Indeed, at the end of ten years I do not think a sprig of it could be found. Digging about it, however, or loosening the soil in any way, will cause it to flourish like a green bay tree; and in order to make of it the very best pasture of which it is capable, it is absolutely necessary to stir it occasionally; for if this be not done, clover or something of the sort

will after a while interfere with it very materially. True, we see splendid pastures of it that are never plowed, but these would be still better if broken up at proper intervals of time.

There need be no fear of spoiling the pasture by any ordinary amount of plowing or digging. Enough of this to exterminate any of the foes to the Bermuda that we have enumerated, will only pulverize the soil and thin out this extraordinary grass in such a way as to make it grow with the most astonishing rapidity. Indeed, getting entirely rid of it by working is almost an impossibility. One can hardly ever know that he has exterminated it. He may take up and burn with his own hand every visible sprig of it. He may take up the surface of the earth for a foot, and the roots do not penetrate very deep unless the ground is pulverized under or about it; he may take up the dirt and sift it all over a given patch, and then he has not destroyed the grass if there be left anywhere a single joint of root; and all must allow that it is well nigh practically impossible to perform this work so that there shall not be, in some corner, or on some fence, root, or rock, a number of these dangerous little particles.

These small pieces, thus escaping observation, during the summer, with the help of a sprinkle of rain, will show themselves all over the ground, and the more work there has been expended in trying to eradicate them, the better will be the condition of the soil, and the more amazing will be the swiftness of their growth. All one can hope for is to keep it in check and work the ground so as to give the growing crop the start of it. If he has a patch of it in a field and does not wish it to spread, let him give it a wide berth. Let him pile brush around it, make a hedge, fence it about, build a wall, create a barrier over which nothing can touch it. Woe to him, if with the delusive idea of preventing it from spreading, he goes to work plowing or digging it. The reward of his pains, three times out of four, will be that it will cover his field.

Do not go to work with the idea of destroying it. You may think you have effected this, but let it go untouched through the ordinary interval between working of crops, and you will be very apt to see it cropping out. You can cultivate a crop in it by bestowing upon it three or four times the labor that you would if it were not present. I once saw a field in which there had been a number of patches scattered about, but at first it was not near all over the surface. The owner shied round these spots for years

without any material increase of the pest, when finally another man bought the plantation. The second proprietor went into this field, broke it up three or four times, planted it in cotton, cultivated it well, giving it, (including the labor of preparation,) at least four times as much work as his other land, and "laid it by" in splendid order. His neighbors all were telling how, wonderful to relate, this man had succeeded in destroying Bermuda grass. At the end of two years that field which before had shown only scattered patches, presented a broad, unbroken expanse of Bermuda grass, and its cultivation has since been abandoned.

I have spoken, incidentally, of several ways in which Bermuda grass is scattered. It is carried along water courses, wherever it is growing, with every rise in the water. Indeed on all rolling land the rains move it about. Cattle and other live stock convey it about on their hoofs, and sometimes, incredible as it may seem, the wonderful grass passed through the stomachs of animals undigested, as is manifested by its growing in cow pens immediately out of the droppings of cattle, when there is not a sprig to be seen anywhere else near. It clings to the wheels of wagons and carts, and to the points of plows that are being carried about in plantations. But perhaps the way in which it is scattered most extensively is with the manure that is hauled out. Around horse lots, cow pens, rich places of deposit of all kinds, if there is any Bermuda grass on the place, it is almost sure to be found growing. When these are raked over and the scrapings carried about to the different fields, the chances are very good to get some of the pest along too. In fact, where it grows at all on a plantation, it is a source of constant uneasiness and terror.

But I say a crop can be cultivated even among Bermuda grass, though it requires (including the preparations of the ground) three or four times the amount of labor that it would if the grass were not present. Any one, after experimenting with a small patch, can estimate the cost of cultivation pretty accurately and see whether or not, considering the actual fertility of the land, or the cost of making it rich, in addition to that of working it, he will be paid for his extra outlay. It seems to me that is the only and very simple question.

In these days of two and four-horse plows and heavy harrows, it may seem scarcely necessary to speak of any other tools; nevertheless, I will, for the sake of those whose means or tastes lead them to stick to one-horse teams.

After ground becomes well set in Bermuda grass, it is almost impossible to break it with any ordinary plow drawn by a single horse, especially in very stiff red or rocky land. Here is my plan: In the fall or early winter I take cutting coulters and go through the patches I design to cultivate, running both ways, at distances of three to five inches. Then I take a turning plow that just goes under the sod, reversing the turf in such a way as to expose the roots to the action of the frost. I pursue the same method in summer, letting the sun take the place of the freezes; but heat injures land, while the cold benefits it. If a hard winter succeed, it will destroy great quantities of these roots, and pulverize the soil in such a way as to render cultivation comparatively easy. The next spring I tear the ground to pieces to the very extent of my ability. There is no difficulty in this method, but the reader will perceive that it involves at least four single-horse plowings before planting, and these, or their equivalent, cannot be dispensed with if the land is to be properly prepared. You may plow, or you may dig, but the requisite amount of work must be performed, or you fail.

I have seen some people hoe the grass up and put it in piles. This is all wrong unless it is to be hauled off and burnt. It must be scattered, however, for the sun or the frost either to have their full effect. I once saw a man, about the first of August, with a crowd of negroes taking up Bermuda grass and piling it in the corners of the fence. I told him it would grow again. "Why," said he, "there isn't a particle of moisture or grain of dirt in it, and see how dry the weather is, and how hot the sun shines." "Wait then and see," was my reply. Well, there was not a drop of rain for three weeks, and sure enough the grass appeared entirely dead. At the end of that time, a rainy season set in, and in less than a week the most glorious coat of grass I ever saw sprang up, and in a short time it grew over the top of the tall fence against which it was piled.

T.

Farmers' Clubs

FURNISH farmers an opportunity to become posted on the prospects of crops and markets; they are another means of relieving farmers of some of the disadvantages of the isolation in which they are placed. The course taken by a club in Michigan, that makes the prospects of crops and markets the first point considered at each meeting, is worthy the attention of all other clubs. In this way, too, the information obtained by those best posted may be much more

generally diffused than has heretofore been the case.

This is especially the case where such clubs are located at the county seat, or some other central place where a goodly number of intelligent farmers may be brought together, and where it is convenient to have the discussions reported in the local and nearest agricultural papers. Then the information brought out will not merely benefit those present—although this will well pay for keeping up a club—but all the readers of the discussions may be more or less benefited also. It is getting to be the practice in many places for most of the leading farmers—men not only noted as standing in the front rank of practical farmers, but as able and intelligent citizens who are competent to fill any position, to take part in the proceedings. These men, in the carefully prepared papers and well considered remarks brought out on such occasions, present some of the best practical facts, reports, and suggestions now published; and the condensed reports of the principal points considered are useful and interesting. These clubs not only bring out a good deal of information that otherwise might not be collected, but in the attendants at the club and the readers of the reports, a good deal of thought and investigation is induced that but for this might not take place.—*The Country Gentleman*.

Shrinkage of Corn.

THE Farmers' Exchange of Louisville, Kentucky, more than a year ago, appointed a committee to test the shrinkage of corn for one year. The report of the Committee, as published in the *Courier-Journal* of that city, is as follows:

Six ears of large-cob corn, a little too ripe to cut up, weighed, with box—

1868—October 2.....	9½	pounds
Nov.....4.....	8	"
Dec.....2.....	7½	"
1869—Jan.....4.....	7	"
Feb.....3.....	6½	"
March...2.....	6½	"
April....2.....	6½	"
May.....4.....	6½	"
Aug.....17.....	7	"
Oct.....2.....	7	"

Six ears of small-cob good seed corn, just ripe enough to cut up, weighed, with box—

1868—October 2.....	8	"
Nov.....4.....	6½	"
Dec.....2.....	6½	"
1869—Jan.....4.....	6½	"
Feb.....3.....	6½	"
March...2.....	6½	"
April....2.....	6½	"
May.....4.....	6½	"
Aug.....17.....	6½	"
Oct.....2.....	6½	"

JOSH BILLINGS is of the opinion that "there is lots of people in this world who covet misfortunes, just for the luxury of grunting."

Reasons for Under-Draining.

IN an old number of the *Albany Cultivator* we find the following concise and approved reasons for under-draining:

1. It prevents water which falls from resting on or near the surface, and renders the soil dry enough to be worked or plowed at all times.
2. By rendering the soil porous or spongy, it takes in water without flooding in time of rain, and gives it off gradually in time of drought.
3. By preventing adhesion and assisting pulverization, it allows the roots to pass freely through all parts of the soil.
4. By facilitating the mixture of manure through the pulverized portion, it greatly increases its value and effect.
5. It allows water falling on the surface to pass downwards, carrying with it fertilizing substances (carbonic acid and ammonia) until they are arrested by the absorption of the soil.
6. It abstracts in a similar manner the heat contained in the falling rains, thus warming the soil, the water discharged by drain-mouths being many degrees colder than ordinary rains.
7. The increased porosity of the soil renders it a more perfect non-conductor of heat, and the roots of plants are less injured by freezing in winter.
8. The same cause admits the entrance of air, facilitating the decomposition of enriching portions of the soil.
9. By admitting early plowing, crops may be sown early, and an increased amount harvested in consequence.
10. It economizes labor by allowing the work to go on at all times, without interruption from surplus water in spring, or from a hard baked soil in summer.

Measuring Corn in Bulk.

WE have seen several plans to measure corn in bulk and ascertain the contents of a crib, but we have not seen any so plain, simple, and correct as the following, which was published in the *Southern Cultivator* many years ago, by Mr. B. T. HARRIS, one of the most extensive and successful planters in Hancock county:

Take a box of any convenient size, for example say, 3 feet long, 2 feet deep, 2 feet wide=12 cubic feet. Fill it evenly with the corn from the crib to be measured, and shell and measure it with your *sealed* half bushel. We will suppose that it holds 5 bushels. Now ascertain the cubic feet in your crib, which we will suppose to be 14 feet long, 10 feet wide, and 10 feet deep=1400 feet.

12 feet : hold 5 bushels—1400 feet hold.

$$\frac{1400}{5} = 280$$

12 | 7000

583½ bushels.

This is a simple application of the rule of three. If the measurements are correctly made it seems to me to be a safe rule.

Dr. Voelcker's Chemical Investigations.

Concluded from September Number.

At the present time the Scientific Committee of the Horticultural Society is engaged in making experiments on special plants. Amongst these are several varieties of clover, on which we intend to try the effect of ammoniacal salts alone, and of various mixtures, and I hope the result will be to bring out some useful information on the subject. It is sometimes difficult to conduct experiments on a large scale with sufficient scientific precision; I therefore strongly recommend the Committee of the Horticultural Society to institute some experiments in boxes. A number of boxes are now set out at Chiswick, and I hope that on a future occasion I shall be able to give you the results of the observations which we are making there with respect to the peculiar action of some special fertilizing agents, such as potash and nitrate of soda. So much, then, with regard to the field investigations which occupied so much of my attention during the last season.

In close connection with these field experiments, I have undertaken to investigate the causes of the benefits which result from growing clover as a preparatory crop for wheat. It is well known to most practical farmers that if they can succeed in growing a good crop of clover they are almost certain to get a good paying crop of wheat. You see how all agricultural matters depend upon each other. If we can by chemical means enable the farmer, on land which otherwise would not grow clover, to produce a good crop of clover, we shall thus place him in the very best position for afterwards obtaining paying crops of corn.

I have come to the conclusion that the very best preparation, the very best manure, if you will allow me thus to express myself, is a good crop of clover. Now, at first sight, nothing seems more contradictory than to say that you can remove a very large quantity of both mineral and organic food from the soil, and yet make it more productive, as in the case of clover. Nevertheless it is a fact that the larger the amount of mineral matter you remove in a crop of clover, and the larger the amount of nitrogen which is carried off in clover hay, the richer the land becomes. Now here is really a strange chemical anomaly which cannot be discarded, and invites our investigation; and it is an investigation which has occupied my attention, I may say, for more than ten years. I first took it up in my leisure hours when I lived at Cirencester.

In the paper which I published in the *Journal* last year you will find analyses of clover roots and clover soils on the College Farm at Cirencester. Chemists are much in the same position as painters; we cannot finish a work off-hand at once; we take up a thing and then leave it for a time. We then take it up again; just as the opportunity occurs to add to our experience, we take up new matter and make it the subject of investigation. Now this clover investigation has very much interested me for a great number of years; but only during the

last season have I been able to bring it to anything like completion, so as thoroughly to explain the strange anomaly that is presented to us in the growth of clover as a preparatory crop for wheat. The explanation is very simple, though puzzling when you know not the chemical points that are involved in the investigation. I cannot deny myself the gratification of showing to you in a few figures that, in a thorough chemical point of view, clover is the most exhausting crop that you can possibly grow, whilst in a thorough practical point of view it is the most restorative crop and the best preparation for wheat that you can possibly grow. Now if we examine what is taken from the land in the shape of clover, we shall find that, assuming an acre of land to yield four tons of clover hay, these four tons of clover hay will remove 672 pounds of mineral constituents, and not less than 224 pounds of nitrogen, which is equal to 272 pounds of ammonia. Four tons of clover hay, the produce of one acre, must contain a large amount of nitrogen, and remove from the soil an enormous quantity of mineral matters abounding in lime, potash, and also much phosphoric acid. Now, comparing what is removed by a crop of wheat, we find that, in a clover crop, we remove fully three times as much of mineral matter, and a great deal more, six times as much, I believe, of nitrogen, as we do in a crop of wheat. The total amount, to give the exact figures, of mineral matters removed in an average crop of wheat amounts to 175 pounds an acre; that is, taking in both the grain and the straw, the total amount of nitrogen removed in the grain of wheat amounts to only 26.7 pounds per acre (not quite 27 pounds,) and in the straw of wheat 19.2 pounds; or in both together 46 pounds of nitrogen, which is only about one-fifth of the nitrogen contained in the produce of an acre of clover.

We should, therefore, naturally expect that clover, which removes so much more nitrogen from the soil, would be greatly benefited by the application of nitrogenous manures; but the reverse is the case. Wheat, it is well known, is benefited by the application of nitrogenous matters, but not clover. On the other hand, clover is benefited by mineral manures; and at the same time it leaves the land even in a better condition in this respect for the succeeding corn crop than it is without the intervention of clover. I believe a vast amount of mineral manure is brought within reach of the corn crop by growing clover. It is rendered available to the roots of the corn crop, while otherwise it would remain in a locked-up condition in the soil, if no recourse were had to the introduction of the clover crop. Clover, by means of its long roots, penetrates a large mass of soil. It gathers up, so to speak, the phosphoric acid and the potash which are disseminated throughout a large portion of the soil; and when the land is plowed the roots are left in the surface, and in decaying they leave in an available condition the mineral substances which the wheat plant requires to enable it to grow. Although in clover hay these mineral matters are removed in great quantity, yet the store of mineral food that we have in six or twelve inches of soil is so

great that it is utterly insignificant in comparison with what remains; in other words, the quantity of mineral matter which is rendered available and fit for the use of the succeeding corn crop is very much larger than the quantity which is removed in the clover hay. But the accumulation of nitrogen after the growth of clover in the soil is extremely large. Even when the clover crop is insignificant a large quantity of nitrogen amounting to tons is accumulated in the surface soil, and the better the clover crop the greater is the accumulation of nitrogen.

In one of my experiments I tried to determine the amount of nitrogen which is left in the portion of the field where the clover was, comparatively speaking, poor, and I found that on the brow of the hill in that field, for it had a considerable declivity, the clover was weak, the produce to an acre being 1 ton, 11 hundred weight, 99 pounds; whilst at the bottom of the hill, where the clover was stronger, there being more soil, it was 2 tons, 2 hundred weight, 61 pounds. Observe, too, that at the bottom of the field the wheat was always better. Now, it is in virtue, I believe, of this accumulation of nitrogen that the wheat grew so much more luxuriantly.

I had another experiment tried two seasons ago upon land on which clover grew tolerably well. The experiments to which I refer were tried at Leighton Buzzard upon the farm of Mr. Robert Valentine. We had a capital field of clover, and I thought I should have a good opportunity of ascertaining whether there was more nitrogen accumulated in the soil after the clover crop was cut twice, or whether more was accumulated when the clover was mown once, and then allowed to run to seed. At first sight you would think that the land was in a worse condition when the crop is grown for seed. We know, indeed, that this is generally the case; but in the case of clover we have a remarkable exception to this rule; and I find, on looking into this matter, that, after growing clover for seed, a very much larger quantity of nitrogen remains in the surface soil, in the first six inches of soil as well as in the second six inches, than when the clover is mown twice.

I have ascertained that when you feed off clover by sheep, when it is still young, and everything is returned to it as it is removed from it, the land is in a worse condition than when you take off the clover hay. This is an anomaly. You say it is against all principle and against all reason. But when you see positive evidence in our fields, I think no scientific man has a right to say that it is against all reason and against all principle. It is certainly not against fact. All who are practically acquainted with the subject must have seen that wheat invariably grows less luxuriantly when you feed it off quite young, and that the best crop of wheat is produced when you grow clover for seed. I have repeatedly and repeatedly seen it. Now, if I had been always shut up in my laboratory, I should never have seen it or investigated it. I should have followed in the track of those scientific men who so frequently turn up their noses at anything they cannot un-

derstand, or that they think unscientific. Therefore, the men who make the practical experiments must be wrong, and they must be right. Now, I think this is a proceeding which cannot be commended. When we see a plain matter of fact, our simple business is to investigate it carefully and conscientiously. Then we shall find frequently, as I have found in other departments of chemical investigations—I allude to my investigations in farm-yard manure—that a practice which is at first sight contrary to all theory, at least with what we call theory, but not against true science, on being investigated, is found to agree perfectly with the established observations of good agriculturists, and that there are really good causes which fully explain apparent anomalies which sometimes are very puzzling.

Referring to those clover investigations, I would just give you the total amount of nitrogen which I found in different layers of soil in the same field, and upon one-half of which the clover was mown twice, and upon the second half of which the clover was mown only once, and then left for seed. The percentage of nitrogen in the clover soil twice mowed for the first six inches amounted to .168; in the second six inches to .092; and in the third six inches to .064.

Thus you see that it becomes very much less the deeper you go down. The accumulation takes place chiefly in the surface soil, and I believe it is principally due to the dropping of the leaves. When we grow clover for seed those leaves continually drop and enrich the surface soil; and if it be the case, which I think is likely, that the clover tribe of plants is satisfied with the ammonia which exists in the atmosphere, we can at once account for the accumulation of nitrogen in the soil. The clover plants take the nitrogen from the atmosphere and manufacture it into their own substance, which, on decomposition of the clover roots and leaves, produces abundance of ammonia. In reality, the growing of clover is equivalent, to a great extent, to manuring with Peruvian guano; and in this paper of mine I show that you obtain a larger quantity of manure than in the largest dose of Peruvian guano which a farmer would ever think of applying; that there is a larger amount of nitrogen accumulated in the first six or twelve inches of soil than there is in the heaviest dose of Peruvian guano that any person would think of using.

On clover soil once mown and left for seed, I found in the three layers of soil a larger percentage of nitrogen than where the clover was mown twice. In the first six inches it was .189; in the next six inches .134; and in the lowest six inches .089. Now the total quantity of nitrogen calculated per acre for 12 inches of soil amounted on that portion of the field mown twice for clover, to 5,249½ pounds; whereas, the total amount of nitrogen in 12 inches of soil on that portion of the field which was mown only once and then left to stand for seed, was 8,126½ pounds; thus producing an excess of nitrogen on an acre of soil 12 inches deep, calculated as ammonia on the part of the field mown once and then seeded, amounting to 8,592

pounds. A very large quantity of nitrogen was accumulated when the clover was left for seed; and the total amount of large clover roots was much greater in the part where the clover was grown for seed; for the longer it is left in the soil the more the roots extend. In the different layers of the soil, also, in every instance more nitrogen was found where the clover was left for seed than where it was twice mown.

There was, as just mentioned, upon one acre 3,592 pounds more ammonia in the land where the clover seed was grown than on the other portion where the clover was made entirely into hay. The chemical points brought forward in the course of this inquiry show plainly that mere speculations as to what can take place in the soil and what cannot, do not much advance the true theory of certain agricultural practices. I would just mention that it is only by carefully investigating subjects like the one under consideration that positive proofs are given showing the correctness of intelligent observers in the field. I have frequently been struck with the remarkably luxuriant appearance of wheat after a heavy crop of clover has been removed from the land. I at first doubted it, but at last I was obliged to confess that it invariably follows when you get a good crop of clover that you also get a good crop of wheat. An enormous amount of nitrogenous organic matter is left in the land after the removal of the clover crop, and this gradually decays and furnishes ammonia, which, at first, during the colder months of the year, is retained by the well-known absorbing properties which all good wheat soils possess. An investigation which I have now in hand, however, shows me that the ammoniacal salts in the soil are rapidly transformed into nitrates. Gradually the oxidation of the ammoniacal salts which are produced from the decomposition of the clover roots takes place, and nitrates are eliminated; but the benefit that we derive from the growth of clover is very much greater than the benefit that we can derive from the direct application of nitrate of soda, because if we use nitrate of soda, we must just hit upon the right point when it will be beneficial to the growing crop. If there is not sufficient rain or water to wash the nitrate of soda into the soil, it does no good, but rather may do harm by burning up the land. If there is too much rain, it may pass into the drains. Nitrate of soda is not retained by the land—not even by clay soils. It passes through them as through a sieve; therefore, it is the most precarious kind of manure that you can use. It is well if you can hit upon the right time, and this you must find out for yourselves. By observation you will find out the right time in the particular locality where you are placed. You may go wrong once, but for a number of years you will generally hit upon the right time. Speaking generally, I would say that about the middle of February in most localities is the right time for the application of nitrate of soda; but, useful as nitrate of soda may be in some special cases, I think the less you use it on poor soils the better.

I should like more indirectly to accumulate nitrogen on my land, and not go to any great

expense in buying nitrate of soda when my land is in poor condition. It is well if you have very good land, but under ordinary circumstances it is perhaps better not to rely upon this source of supply. Nitrate of soda may readily be washed out; but you will notice that the benefit that you obtain from clover roots is, that you have a continuous source from which nitrates can be produced. It does not matter if some of the nitrates pass away in the drain; you have an enormous accumulation of decaying organic matter. The clover roots and leaves are not all at once changed into ammonia; but there is a gradual transformation of the organic matter, first, into ammoniacal salts, and a gradual change from ammoniacal salts into nitrates, and you have a complete series of chemical transformations which is highly conducive to the gradual development of the plant. Whereas, by using nitrate of soda, you run the risk of getting it washed away into your drains. Thus, there is more certainty of growing a good crop of wheat through the instrumentality of clover than through the direct supply of the nitrate of soda.

These, then, are the chief points which have been established, I believe, by my chemical experiments in the laboratory with respect to the chemical history of the clover crop.—*Journal N. Y. State Agricultural Society.*

How Clover Fertilizes and How Plaster Acts.

WE publish below the opinion, derived from practical experience, on this important subject of Mr. GEDDES, one of the most skillful and successful farmers in New York. The article will richly repay perusal:

I had not intended to say more on this subject, but the reading of Dr. Boyd's article in the *Weekly Tribune*, of the 16th, impels me to remark that he is entirely correct in saying, "Such is the constitution of the human mind that we only, as it were, believe that a phenomenon in nature exists until we know the reason for its existence." I have been so long trying by experiments to determine whether clover really added to the fertility of the soil that produced it, or whether the clover plant was all the while exhausting the subsoil, and merely lifting the fertilizing qualities that there might be in the subsoil to the surface by its long tap roots, that I had to some degree lost sight of the great truth embraced in the quotation I have made from Mr. Boyd's last article. I thank him for calling attention to it.

My experimental field, that has now had the crops of seventy years of grain and grass taken off it, during which time it has been under the cultivation of my father, myself, and my son, having for all that time received no manure except clover seed and plaster, and has constantly improved in fertility, I suppose to be the most perfect practical test to which this question has ever been subjected. During the last thirty years this field has been visited by men eminent as writers upon agricultural science. All of them have said that in time I would impoverish the soil by my manner of treating it.

Professor James F. W. Johnston, twenty years since, while visiting this country, examined this field, and said that "Such severe—what we should call scourging—treatment may be continued a great many years with apparent impunity, although it tells very soon on land of inferior quality. But even on this land it tells at last."—*Johnson's Notes on North America, Vol. I., page 172.*

Determined, as I have been, if life lasted long enough, to test the truth of these theories of scientific men, we have drawn our barn-yard manure, at some inconvenience, to fields lying beyond it, and have depended for this one field entirely on clover and plaster, with the result I have stated, not entirely free from lingering fears that the book men might be right after all—"that it would tell in time."

Professor Voelcker, so far as I know, was the first man who had any reputation for scientific knowledge who attempted to grapple with the question, and who could be persuaded to admit the possibility of clover adding to the productiveness of the soil on which it grew by fertilizing matters drawn from the atmosphere. I hailed his lecture on this subject with a gratification I will not try to express. He may not have hit on the true explanation of the way in which clover fertilizes the soil. Mr. Boyd's may be the better theory—I cannot decide between two such able men in regard to a question in science—but I do congratulate the farmers upon the fact that such men are thinking and reasoning in regard to this matter, and these are not the only thinkers who are now employing themselves in this investigation.

Synopsis of the Proceedings of the - Agricultural Convention of the State of Georgia.

DEGIVE'S OPERA HOUSE, }

ATLANTA, Tuesday, August 16, 1870. }

Agreeably to a call issued for a Convention of the State Agricultural Society, and of delegates from County Societies, a large number of the State Society and of delegates from County and District Societies and Associations were assembled in this Hall. At 10 o'clock the assemblage was called to order by the President of the State Society, Hon. B. C. Yancey. When all were seated and quiet, prayer was offered by Rev. Dr. Harrison, of Atlanta, who had been invited to attend as Chaplain.

The Executive Committee submitted a form of Constitution by Col. Capers.

Another form of Constitution was submitted by General Browne, of Clarke. At the conclusion of the reading, Gen. Browne moved that these two forms of Constitution, and that of C. W. Howard, by Gen. Wright, be referred to a committee of seven, and that they report at 3 o'clock, P. M.

The committee appointed were General Wm. M. Browne, J. M. Stubbs, D. A. Vason, W. O. Tuggle, H. D. Capers, Ben. T. Harris and D. W. K. Peacock.

WEDNESDAY.

The Report of Committee on Constitution was read, taken up, and adopted.

The Constitution was then, on motion of Mr. Stubbs, declared adopted.

The following shall be the Constitution of the Georgia State Agricultural Society :

CONSTITUTION.

Art. I. This Association shall be known by the name of the *Georgia State Agricultural Society.*

Art. II. The Officers of the Society shall be a President, and one Vice-President from each Congressional District, which officers shall be elected by ballot by the Society in convention as hereinafter prescribed.

Art. III. The Legislative and Elective power of the Society shall be vested in the Convention of Delegates from the County Agricultural Societies. These delegates shall be elected by ballot by the County Societies, in January of each year, or as early thereafter as practicable.

Each county shall be entitled to send three delegates to the Convention, and if there shall be more than two organized Societies in each county, then the representation from that county shall be double this number. The Delegates shall hold their appointment for one year.

There shall be two Conventions annually: the first on the 22d of February; the second at such time and place in the Fall as the Spring Convention shall determine. At the Fall Convention the Annual Fair of the Society shall be held. An election for President, Vice-Presidents, and members of the Executive Committee, shall be held during the present Convention, and shall be inaugurated at the Spring Session of 1871. Hereafter, the election for these officers shall be held during the Spring Session of the Society. The present officers shall hold their offices until their successors are inaugurated, as provided for in this Constitution.

At the Fall sessions hereafter the President and Vice-Presidents and members of the Executive Committee from the Congressional Districts shall be elected for the succeeding year, their duties to commence with the first or Spring session of the next year, at which time the Executive Committee and Secretary and Treasurer of the preceding year shall make their annual report. The President shall be inaugurated at the Spring Convention, and publicly, on the 22d of February; if this day shall fall on Sunday, then on the day succeeding. At the Spring Convention the standing committees on all subjects deemed important to the interest of Agriculture, Mechanics, Manufactures, and the Mineralogical interests of the State shall be appointed, and they shall make their reports at the Fall session.

The President, Vice-Presidents and members of the Executive Committee, ex-Presidents of the Society, and life members now on the roll of the Society, and life members as hereinafter provided for, shall be members of this Legislative body.

Any person who shall be interested in the Agricultural, Manufacturing, Mechanical, or Mineral interests in this State, shall be nominated to the Executive Committee of this Society for election as a life member upon the payment of \$20, but the Society reserves the right

through its Executive Committee to reject any person so nominated.

Hereafter, annual members shall only be entitled to seats in the Conventions of Delegates, and to indulge in the privilege of debate.

Upon the rejection of a person by the Executive Committee who shall be nominated for life membership, the fee of \$20 shall be returned to him from the Treasury of the Society.

Art. IV. There shall be three Executive Committeemen from each Congressional District, and shall be chosen by ballot, or otherwise, as the Convention may determine at the Spring session.

The Delegates in Convention, from each District, shall nominate five names, from which the Convention shall choose three members of said Board to serve as the Executive Committee from their Districts. The members of this Board, at the first election; shall be elected for one, two, and three years, and one member from each District annually thereafter; one member from a county only. The President and Vice-Presidents shall be *ex-officio* members of the Executive Committee; and the Committee, thus constituted, shall have the power to elect the Secretary and Treasurer, and prescribe their duties. A two-thirds vote of the whole Committee shall have the power, for cause, to remove these officers and fill their vacancies.

The President may suspend the Treasurer or Secretary for any gross malfeasance in office, and appoint a successor, *pro tempore*, to discharge their duties.

The members of the Executive Committee shall be *ex-officio* members of the Legislative and Elective body of the Society, and entitled to vote on all questions coming before it.

The President may call extraordinary sessions of the Committee and Convention, if deemed necessary.

Art. V. Ten counties, represented by delegates, shall be a quorum of the Convention of the Society, for the transaction of business, in conjunction with a quorum of the Executive Committee. Eleven members of the Executive Committee shall be a quorum. If seven Congressional Districts are represented at any meeting of the Executive Committee, five members shall be a quorum thereof.

Art. VI. The Treasurer shall keep the funds of the Society, and disburse them on the order of the President or a Vice-President when acting in his place, and shall make a report of his receipts and disbursements at the Spring annual meeting. The Treasurer shall pay no order that is not countersigned by the Recording Secretary. He shall be required to give a bond in a sum satisfactory to the President, and to be approved by the Executive Committee. The Secretary shall take charge of, distribute or preserve all seeds, plants, books, models, specimens in mineralogy or natural history which may be transmitted to the Society; shall have charge of all communications designed or calculated for publication; and so far as may be deemed proper, shall collect, arrange, and publish the same in such manner and form as he may deem best calculated to promote the objects and interests of the Society, by the 22d of

February of each year. He shall also keep a neat and perfect record of the acts and doings of the Annual Conventions or Extraordinary Sessions of the Society, and act as Secretary to the Executive Committee, keeping a perfect and neat record of their transactions, and shall publish his records as directed by the Executive Committee or the Society.

Art. VII. The annual Fairs of the Society shall be held at such time and place as may be determined by the Executive Committee.

Art. VIII. The Executive Committee shall by ballot elect a Secretary and Treasurer, whose terms of office shall continue for three years, but removable upon cause; and the Executive Committee shall fix the salaries and define the duties of these officers.

Art. IX. The Executive Committee shall make an annual report of its actions through its presiding officer at its annual meeting; this action of the Executive Committee shall be subject to the approval or disapproval of the Society, in Convention.

Art. X. At all elections held by the Executive Committee, under the provisions of this Constitution, the persons receiving the greatest number of votes shall be declared elected.

Art. XII. County Agricultural Societies may pay into the Treasury such sum as they may deem proper, on the request of the Executive Committee.

Art. XIII. This Constitution shall go into force at once, except so much thereof as applies to the regulations of the Executive Committee made for the conduct of the Fair of 1870.

Art. XIV. This Constitution shall be amended or altered by a vote of two-thirds of the members present at any annual meeting of the Society in Convention, upon one year's notice in writing.

W. M. BROWNE,	} Committee.
H. D. CAPERS,	
D. A. VASON,	
W. O. TUGGLE,	
D. W. K. PEACOCK,	
B. T. HARRIS,	
J. M. STUBBS,	

It was moved then to go into an election of Officers.

President B. C. Yancey declined re-election.

Mr. Leigh, of Coweta, nominated General A. H. Colquitt.

Mr. Lee, of Fannin, nominated Colonel H. D. Capers. Col. Capers withdrew in favor of Gen. Colquitt.

On motion of Mr. Stubbs, of Laurens, Gen. Colquitt was unanimously elected.

On motion of Mr. M. E. Cooper :

Resolved, That the thanks of the Convention are due Hon. Benjamin C. Yancey for the ability, impartiality and forbearance with which he has presided over this Convention through its protracted and exciting debates, (Vice-President Baugh in the chair.)

When all who were in favor of the motion were called upon to rise, not a man remained sitting.

President Yancey, on resuming the chair, said, with great emotion, that all he could say

was, that he thanked them from the bottom of his heart.

The following were nominated for Vice-Presidents, and elected by acclamation :

First District—W. Schley.

Second District—D. A. Vason.

Third District—R. J. Redding.

Fourth District—L. F. Livingston.

Fifth District—S. Barnett.

Sixth District—D. C. Barrow.

Seventh District—C. W. Howard.

The following Executive Committee of three from each Congressional District were elected by ballot :

First District—Gen. G. P. Harrison, Chat-ham; Colonel A. P. Wright, Thomas; J. M. Stubbs, Laurens.

Second District—B. G. Lockett, Dougherty; J. K. Barnum, Stewart; G. M. Stokes, Lee.

Third District—J. A. L. Lee, Muscogee; J. M. Mobley, Harris; J. H. Fannin, Troup.

Fourth District—B. F. Ward, Butts; J. S. Lawton, Moultrie; John Jones, Terrell.

Fifth District—Pope Barrow, Oglethorpe; L. C. Warren, Jefferson; T. J. Smith, Washing-ton.

Sixth District—J. S. Hamilton, Clarke; R. D. Winn, Gwinnett; J. N. Montgomery, Madi-son.

Seventh District—George S. Black, Rome; Wm. Phillips, Cobb; R. M. Young, Gordon.

The members of the Executive Committee drew for their terms, with the following result :

One year—G. P. Harrison, J. K. Barnum, J. H. Fannin, J. S. Lawton, T. J. Smith, R. D. Winn, W. Phillips.

Two years—J. M. Stubbs, G. M. Stokes, J. M. Mobley, B. F. Ward, Pope Barrow, J. S. Hamilton, R. M. Young.

Three years—Col. Wright, B. G. Lockett, J. A. L. Lee, John Jones, L. C. Warren, J. N. Montgomery, G. R. Black.

The Convention then adjourned until to-mor-row morning at 9 o'clock.

THURSDAY, August 18, 1870.

The Convention assembled at nine o'clock, A. M.

The committee on Mr. D. C. Barrow's resolu-tions and others relative to appropriations, re-ported the following resolutions :

Resolved, That a committee of five be ap-pointed by the Chair to prepare a suitable me-morial to be presented to the General Assem-bly of the State to embrace all the objects and the points upon which this Convention shall take action.

Resolved, That whereas the immense agri-cultural interest of this State, underlying the entire prosperity of all sections and classes and diversified pursuits, has no adequate organ to represent its interests, to ascertain, define and promote them; and whereas a provision for this object ought to be made commensurate with the interests to be subserved, this con-vention requests the Legislature of the State to es-tablish an Agricultural Department upon such a basis as will largely and liberally provide for all purposes of information, improvement and guidance of the agricultural and mechanical in-dustry of this State. To this end the said de-

partment shall have agencies in every county in the State, either availing itself of the existing county officers, such as Tax Receivers and Col-lectors, or of officers for the express purpose of collecting information in advance so far as prac-ticable, and also of detailed information as speedily as possible after the facts of each year shall have transpired; and

Whereas, The means of information ought to be extended to cover the whole country, that said department offer to co-operate with those established, or to be established, in other States and with the Department of Agriculture at Washington, the scale of information for prac-tical action being at least co-extensive with the national production.

The duties of the Agricultural Department shall include the devising of improved meth-ods of estimating the probable acreage and crop of the country, and of making a virtual census annually, embracing all crop topics ca-pable of reasonable and probable anticipation, as well as of actual results, in order that the producer may act as far as practicable after in-formation rather than before it. This census shall be made so frequently, and in such form as not to be burdensome to the citizens, who after one or two returns merely revise their former returns. The department provided for shall tabulate and publish its statements, so that all the sources of State prosperity shall appear in a form for easy reference, and the compar-ison be readily made of the productions of dif-ferent sections, and the relative profits of dif-ferent products. The great object of the depart-ment shall be to give intelligent direction to the practical industry of the State, to disseminate information which will tend to the increase of production, and to the not less important mat-ter of the judicious and profitable sale of prod-ucts, to place the producer on a level with the speculator and consumer in his knowledge of the elements of price, and so to reduce the vio-lent fluctuations which occur, chiefly to the de-triment of honest and uninformed labor.

The department shall adopt the most im-proved methods of preserving, on a large scale, observations of the weather, seasons, tempera-ture, and other phenomena to increase the means of anticipating results.

It shall publish comparative statements of estimates and actual results. In a word, it shall be the organ of the great industrial inter-ests of the State, enabling them to combine and consolidate effort, disseminate information, pro-curing information, and furnishing guidance, both to the industry which produces and the intelligence which disposes of the productions of the State. That in connection with the de-partment there shall be established an experi-mental farm, a place for the exhibition of tools and implements, a museum, cabinet, and such other means and appliances as shall subserve the important purposes of its foundation.

Whereas, The State of Georgia has recog-nized the duty of government to provide for the diffusion of knowledge among her citizens; and

Whereas, The tendency of modern civiliza-tion is to the largest extension of physical and

material knowledge as the foundation of all other forms of knowledge, and as the interest of agriculture demands new and special preparation, and a vast increase has been made in the means of promoting such knowledge, in introducing which there has been no adequate or even proposed provision made by the State; and

Whereas, A mere annual appropriation will be precarious and uncertain;

Resolved, That the Legislature be memorialized, and requested to require and enable the University of the State to establish on a liberal basis, and in accordance with the advanced development of science, such schools of scientific, business, and agricultural knowledge so endowed and with such appliances as shall leave the State behind no other in all the means of practical education.

We recommend that the committee appointed by the Executive Committee in February last to memorialize the Legislature for the purpose of collecting such sums as may be due this body, shall do so in behalf of the Society.

Resolved, That the committee to memorialize the Legislature recommend such action in regard to the fence laws of this State as shall leave the policy of the law on that subject to be determined by each county for itself, according to its local condition and exigencies, the details of legislative action to be determined by that body, but with liberal rights of regulation on the part of the counties to be affected by them.

Resolved, That a committee of three be appointed by the chair to urge upon the Legislature the importance of taking initiatory steps to secure the Congressional grant of 270,000 acres of land for the endowment of one or more Agricultural Industrial Colleges in Georgia, and for executing the trust assumed by the State under the act of 1866.

Resolved, That a committee of three be appointed by the chair to memorialize the Legislature, expressing the gratification of this convention at the introduction of a bill before that body for the creation of the office of State Geologist, and their hope that a measure so fraught with good to the whole State will receive the speedy sanction of the General Assembly.

The report of the committee was adopted unanimously.

General W. Phillips offered the following resolutions as an amendment to the report of the committee:

Resolved, That this Convention appeal to the General Assembly for an appropriation of \$25,000, and the passage of a bill providing for an annual appropriation of \$10,000 for the purposes stated in the report of the committee in establishing an Agricultural Department.

Resolved, That the moneys thus appropriated by the State be expended by the Executive Committee in the establishment and furtherance of the Agricultural Department.

Adopted unanimously.

The chairman appointed the following as a committee to carry out the object of the committee:

S. Barnett, D. A. Vason, T. C. Howard, W. Phillips, C. W. Howard.

By L. F. Livingstone—adopted:

Resolved, That one thousand copies of the resolutions adopted relative to seeking and expending an appropriation for an Agricultural Department be published and distributed by the Secretary to the County Societies, with the request that their full import be explained and impressed on the minds of the planters.

Mr. Adams, of Monroe, gave notice that he wished to file the following amendments to Article 4 of the Constitution, as amended:

Three names, which, if approved by vote of the Convention, shall serve as members of the Executive Committee from their Districts—said vote to be by ballot or otherwise.

By Colonel A. Hood—adopted:

Resolved, That Colonel T. C. Howard be requested to furnish the Convention with a copy of his speech delivered on the Agricultural Department for publication.

By S. Barnett—adopted:

Resolved, That, at this late day, this Convention desires to pass a vote of thanks to the Hon. Peterson Thweatt, former Comptroller-General of the State, for the valuable public services rendered in the past in furnishing important statistical information on various points of public interest, and for his zeal and energy in rendering these services in a large measure gratuitously, and for a long time meeting with but a limited appreciation.

Adjourned till 8 o'clock, P. M.

Evening Session.—The Convention reassembled at 8 o'clock, P. M.

The subject of selecting an organ for the Convention was referred to a committee to report at the fair in October next.

By Mr. Hitch, of Clinch—adopted:

Whereas, The fair to be held during the month of October, 1870, is intended to be a grand national exhibition of American industry; and *whereas*, said exhibition will be held under the immediate control and supervision of the Georgia State Agricultural Convention; therefore

Be it Resolved, That we, the delegates and representatives of the Georgia State Agricultural Convention assembled, do hereby extend to our fellow-citizens of the North, East and West a cordial invitation to meet their brethren of the South at said fair to exchange greetings, to exhibit stock, agricultural implements, and other articles of home industry, and thus promote the mutual interests of all sections.

By Mr. Hunter, of Wilkes—adopted:

Resolved, That the Chair appoint, at his leisure, three delegates from each Congressional District to represent this State in the Agricultural Congress to assemble at Augusta on the 27th of October next.

The Chair appointed the following under the above resolution:

First District—J. B. McKinne, Emanuel; J. L. Seward, Thomas; P. M. Nightengale, Glynn.
Second District—D. A. Vason, Dougherty; J. A. Cobb, Sumter; A. H. Colquitt, Baker.

Third District—W. O. Tuggle, Troup; W. S. Wallace, Taylor; H. Harris, Meriwether.

Fourth District—T. G. Holt, Jr., Bibb; Dr. A. Means, Newton; G. W. Adams, Monroe.

Fifth District—Thomas T. Hunter, Wilkes ; J. B. Jones, Burke ; B. T. Harris, Hancock.

Sixth District—R. D. Moore, Clarke ; J. G. Findley, Hall ; H. R. Foote, Gilmer.

Seventh District—M. A. Cooper, Bartow ; General W. Phillips, Cobb ; Rev. A. I. Leit, Catoosa.

By S. Barnett—adopted :

Resolved, That the thanks of this body are cordially tendered to the editors of the *Plantation* for their most liberal and generous offer in regard to the printing of the documents and other publications of this Convention.

Resolved, That the delegates to the Agricultural Congress have authority each to fill his own vacancy in case of inability from any reason to attend said Congress.

By W. O. Tuggle—adopted :

Resolved, That the thanks of this Convention be and are hereby tendered to the various officers of the State Agricultural Convention, for their faithful discharge of duties tending to promote the welfare of the farmers of Georgia ; to the press for their efficient service to this body, and to the citizens of Atlanta for their generous hospitality.

By Gen. W. M. Browne—adopted :

Resolved, That the thanks of this Convention are due, and are hereby given to the Railroad Companies of the State, for their liberality in furnishing free tickets over their respective roads to delegates of this society, and for the interest they have thus manifested in the promotion of the cause of agriculture.

Mr. R. J. Redding, of Schley—

Resolved, That the Executive Committee be instructed to exclude from the Fair Grounds, at our approaching Fair, all shows and exhibitions that shall not be free to all persons who pay for admission into the grounds.

Referred to the Executive Committee.

Mr. V. G. Hitt, of Lee :

Resolved, That the Executive Committee be instructed to offer prizes for the following essays :

On the chemical character and agricultural value of the various fertilizing substances, such as bones, stable, and other domestic manures, lime, charcoal, etc.

On the best mode of preserving cistern water pure.

On the best mode of preventing malarious fever.

Resolved, That the prizes be awarded by a special committee.

Referred to Executive Committee.

By Mr. Leonard, of Muscogee :

Resolved, That a committee be appointed to prepare a written statement as to the best plan or system for the management of labor.

The Chair appointed the following as the committee: Messrs. D. A. Vason, Albany ; B. G. Lockett, Baker county ; B. H. Hill, Athens.

A resolution was unanimously adopted requesting Colonel H. D. Capers and Col. Enoch Steadman to give the benefit of their enlarged experience and wise counsels to the New Executive Committee who go into office in 1871.

By Judge J. E. Brown :

Resolved, That the thanks of this Convention be tendered to the reporters of the press. Passed.

On motion of General Phillips, of Cobb, the Convention adjourned *sine die*.

From Hearth and Home.

"Don't go too Slow."

Over and over again,

This was the song he sang,

Up and beyond the grand old hills,

And loud through the woods it rang,

"Gee up and gee ho !

Don't go too slow !

"Twill be night before you know it !

If you have got any smart in your bones

Now is the time to show it !"

Over and over again,

This was the song he sang :

And the oxen, rolling their loving eyes,

Quick to their hard work sprang :

"Gee up and gee ho !

Don't go too slow !

"Twill be night before you know it !

If you have got any smart in your bones

Now is the time to show it !"

Over and over again,

After the lapse of years,

The song of the sturdy farmer's boy

Kept ringing in my ears :

"Gee up and gee ho !

Don't go too slow !

"Twill be night before you know it !

If you have got any smart in your bones

Now is the time to show it !"

Over and over again,

Says I to myself, says I :

"Not only to beasts of burden, but

To man will these words apply."

"Gee up and gee ho !

Don't go too slow !"

"Twill be night before you know it !

If you have got any smart in your bones

Now is the time to show it."

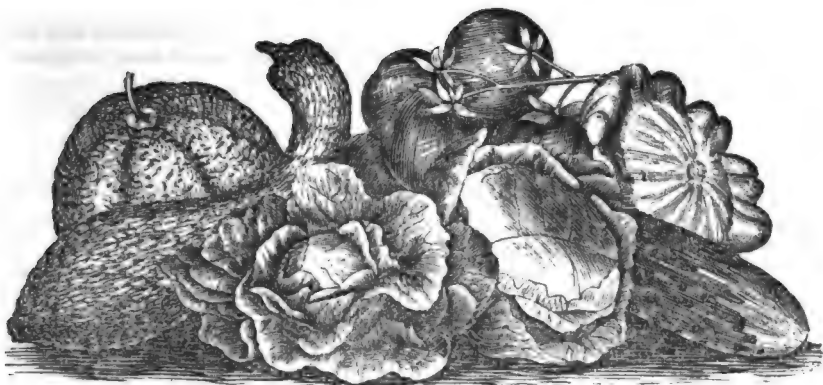
A Good Showing.

MATRIMONY is—hot cakes, warm beds, comfortable slippers, smoking coffee, round arms, red lips, kind words, shirts exulting in buttons, redeemed stockings, boot-jacks, happiness, etc.

Single blessedness is—sheet-iron quilts, blue noses, frosty rooms, ice in the pitcher, unregenerated linen, heelless socks, coffee sweetened with icicles, gutta-percha biscuits, rheumatism, corns, coughs, cold dinners, colics, rhu-barb, and any amount of misery.

THE greatest wrong that can be done a man is to rob him of reputation, and he who does it, sooner or later will pay a penalty far greater than he who commits the boldest of larcenies.

EVERY farmer, to make his farm a source of profit, should make it a source of pride.



Horticultural Department.

The Vegetable Garden.

WITH a little attention and diligence a Winter garden may be made nearly as productive as the Spring and Summer garden, especially in those portions of our highly-favored country where the frosts are never very severe. Turnips, beets, cabbage, lettuce, carrots, parsnips, spinach, onions, mustard, salsify, and all the hardy and half hardy vegetables may be planted now, provided the soil be rich and well prepared. It is time, labor and money thrown away to plant in poor and unbroken ground. As you plant so shall you gather.

If cotton-picking and the gathering of corn and peas do not absorb all the hands and all the thoughts, this is a good month to begin the preparation for the Spring garden. Now is the time to haul out the coarse and green manure and turn them under with a spade fork to rot during the winter. By the time you are ready to sow your seeds in early Spring, the manure will have become completely assimilated with the soil, which will be light and friable.

Now that the asparagus plants are beginning to fade, cut them all down close to the ground, leaving the tops where they fall, and towards the end of the month cover the beds over with a heavy coating of rough stable manure, which will soak through during the winter, conveying the salts and essence of the manure to the roots of the plants. Before applying the manure it would be of advantage to sprinkle salt over the beds—the coarsest you can find—at the rate of a peck to the rod.

Collect carefully all weeds, trash, and refuse of all sorts, and add them to the compost heap,

for use next year. This is a most lucrative bank of deposit, yielding very heavy dividends.

The Flower Garden.

WHEN Spring begins to think of opening, there is no more agreeable herald of its approach than the Hyacinths, Crocuses, Anemones, Snowdrops, Tulips, Ranunculus, Polyanthus, etc., which, if planted now in rich beds, will present a beautiful show in February next. The sooner they are put in the ground the sooner they will bloom next year, and the stronger they will be.

This is a good time to set out biennials where they are intended to bloom. It is also a favorable season to transplant hardy perennials.

There are many annuals which if sown now will flower earlier and do better than if sown in the spring, such as Clarkias, Nemophila, Coreopsis, etc.

When the leaves of Dahlias are nipped by the frost, cut off the stems, and take up the tubers and keep in a dry place, protected from frost during the Winter.

In your choice of bulbs do not forget the Tube Rose, Jonquil, Gladiolus, Peony and Amaryllis.

The Gladiolus blooms after the Hyacinths, Crocuses and Tulips, and though they are destitute of perfume, they are very beautiful, often growing to a height of three feet, with stems covered with rich crimson flowers.

The Amaryllis comes after the Gladiolus, with its splendid clusters of crimson and gold, white spotted, with rose-color and yellow blossoms. The Amaryllis has a very powerful perfume, too powerful perhaps for planting near the house.

The Jonquil should be planted now, the Tube Rose may be planted later.

The Orchard.

Our directions in our last number for the management of the Orchard will be found equally applicable to the present month.

It is well to pitch off now the ends of the branches of fig trees, for the double object of making the fruit ripen rapidly, and causing the young wood to harden, and be thus protected against frost.

Those who purpose planting young fruit trees this winter should now select their varieties, prepare their lists, and send them to some reliable Southern nurseryman. After this the ground should be thoroughly prepared and everything made ready to set out the trees in the end of November or beginning of December.

For the Southern Farm and Home.

Transplanting Trees and Shrubs.

BY THE LATE WM. N. WHITE.

[*Concluded from last Number.*]

IN concluding this article, a few hints with regard to transplanting trees may be of service to the reader. The fall and winter months should be selected for this purpose.

The necessary directions may be found in the following extract: "In choosing shade trees, those only, as a general rule, should be selected, which have the property of transplanting easily. Four of our native trees may always be depended upon, for they will almost always thrive, even under such rough usage as would destroy trees less hardy. These four are the maple, the elder, the willow, and the locust. But, after all, the best thing to do is not to trust to the transplanting of trees from woods and hedge rows, but to select such as have been raised in a nursery, and whose young roots, by frequent removals or by constant trimming, have thrown out an abundance of fibres. If, however, circumstances render it desirable to have trees from the woods, with time and patience the transplanting of these can be safely and certainly effected—though in the course of the next ten years the small tree from the nursery, an inch and a half in diameter, will outstrip in height and beauty the tree which, when taken from the woods, was six inches in diameter. But if trees are to be taken from the woods, here is the best method of doing it: Around the tree, at the distance of four feet from the trunk, dig a circular trench two feet deep, cutting and removing all the interposing roots. Replace the earth, and in a short time

a multitude of new fibres will be thrown out into the loosened soil. The following year the tree may be transplanted to any situation where it may be required. Another method is to dig a circular trench four feet from the body of the tree and three feet deep, cutting the earth well away from under the bottom, until the whole mass rests upon a pivot. This should be done either early or late in winter. Let the mass of earth stand until it is well frozen through, and then transplant the tree, with the frozen ball attached, wherever it is designed that it shall grow in future. But, after all, there will be more satisfaction derived, in the long run, from trees drawn from the nursery, than from trees of a much larger size derived from the woods. A skillful planter, of course, can make almost any tree grow; but there are very few farmers or country gentlemen who claim to have much knowledge with regard to the transplanting of trees, or we should have fewer occasions to complain of the bleak appearance of our country cottages and farm houses, and the evidences of a want of taste in their surroundings. In planting shade trees, even those which are taken from a nursery, and therefore young, thrifty and well rooted, it is not sufficient to merely 'dig a hole, thrust in the tree, and leave the rest to nature.' The better a tree is treated in the beginning, the more certain it will repay the obligation. Dig every hole three feet wide and two feet deep; let the soil with which it is to be filled be rich and finely pulverized. Do not plant the tree any deeper than it stood in the nursery; stake it securely when it is planted, and to preserve it against drought, cover it with coarse manure and refuse straw as a mulching." Dig around the roots in spring and renew the mulching.

In taking up trees and shrubs, the side which was towards the North should be carefully marked, so that when replanted it may occupy the same position with regard to the points of the compass as in its former situation—the North side to the North, the East to the East, etc. This rule is often neglected, yet the tree will thrive much better if it is attended to.

In most of the English works upon gardening the advice is given, not only to take up the root with all possible care, but to entirely avoid cutting off the branches. Lindley says: "With regard to pruning plants when transplanted, there can be no doubt it is more frequently injurious than beneficial." Other authors agree with Lindley, and in the moist climate of England the advice may be good, but this will not

do in our country. The action of our sun upon a tree set out in autumn or winter, and not cut back, would shrivel the young branches of many trees beyond recovery before the season of growth commenced. If set out later, the season being more advanced, and evaporation still greater from the expanding leaves and greater heat, while the root is not at all established, the danger to the plant is still greater; and if plants thus treated do survive, they will make little growth, and are likely to receive a check which will extend through their future.

It matters little how much the top of a tree is pruned back if it has good, heavy roots. Evergreen trees are, in general, exceptions, and if pines or other conifers are cut back at planting, the form of the tree can never be restored. Hence those should be selected that have been taken up and reset yearly in the nursery until a fine mass of fibrous roots has been formed, and these should be protected from the air until the tree is reset. In the case of magnolias, they may be cut back a little, and are greatly relieved from excessive evaporation if a portion of the leaves are also removed. No evergreens will move without great danger in this climate, unless while quite young and treated in this manner.

The roots of all plants should be exposed as little as possible to the air and sun. I have seen a lot of oaks for the street lying with their roots exposed to a full sun and a drying wind, while a boy was lazily digging the holes to receive them. By moving the trees a few feet, they would have been in a measure screened by a fence. Most men have not skill enough to make oak trees thus treated live, but it is said there is always a special interposition in behalf of fools, drunkards and children.

For the Southern Farm and Home.

Profits of Fruit Raising.

Those of us who admit that a diversified industry is essential to the attainment of a high degree of material prosperity, and who have learned by experience that exclusive homage to "King Cotton" is a fatal error, are anxious to learn how to "diversify" their industry so as to make it pay. We think that fruit-raising would prove a highly profitable business. It is well known that in the North, where land is much more expensive and fruit cheaper than in our country, it has proved very profitable, and it is therefore natural to suppose that with our

superior climate and superior soil, it might be made equally profitable here.

In every case where the attempt has been made success has followed, and it is only necessary to refer to the orchards of Major Moses, near Columbus, of Mr. Buckner, near Milledgeville, (now owned by Capt. J. Jones,) to prove that the culture of good fruit pays well, far better than cotton at the rate of a bag to the acre, and at twenty-five cents per pound.

But we are told that if fruit-raising were to become a regular business at the South, the present prices could not be maintained, and that owners of orchards would get next to nothing for their fruit. To some extent this is perhaps true. Prices would probably fall with increased supply, but still they would be amply remunerative for the labor and expense devoted to the business.

In New York, Massachusetts and New Jersey, fruit has been extensively cultivated for the last hundred years. Their orchards are the chief source of income of numbers of rich men—they are their "plantations"—and notwithstanding the extent of the business, not two years ago we saw pears sell in New York at the rate of \$8 per dozen, and some extra fine at \$1 for a single pear. From \$9 to \$12 per barrel is a common price for apples in the markets of the principal Northern cities.

We know of small orchards in the South that are badly managed which in a moderately good year yield an income of \$10 per tree, and we have known of the fruit of single pear trees being sold for \$50.

Now we would ask how can any farmer devote ten or fifteen acres of his land to any more profitable use than to an orchard which would pay at anything like this rate of remuneration? We wish our farmers would only resolve to make a beginning, and plant a small orchard this fall, using a proper discrimination in the selection of the varieties best adapted to their soil and climate, and purchasing their trees at some Southern nursery of approved reputation, not from the Northern tree-peddlers. We believe that were they to do so they would find that their orchard would soon become the most profitable part of their farms.

We have hurriedly thrown out the above suggestion in the hope that they may attract attention to the subject, and induce persons thoroughly conversant with fruit-raising to help the cause of "diversified industry" by publishing their experience.

POMONA.

Household Department.

Domestic Receipts.*

BY MRS. WM. N. WHITE.

WATERMELON RIND PRESERVES.—Select your rind, firm, green and thick; cut them in any fanciful shape, such as leaves, stars, diamonds, etc. When cut, weigh, and to each pound of rind allow one and a half pounds of loaf sugar. To green them take a brass or copper kettle, and to a layer of grape vine leaves, which should be well washed, add a layer of the rind, and so on until the last, which should be a thick layer of the leaves, and well covered with a coarse linen cloth. To each pound of the rind add a piece of alum the size of a pea; then fill up with warm water sufficient to cover the whole, and let it stand upon the stove, where it will steam but *not boil* until the greening is completed, which will be in two or three hours. When green, lay them in clear, cold water and commence your syrup. To each pound of sugar add one and a half pints of water, clarify, put in your rind; have ready sliced some lemons, two to each pound of rind, and when about half done add the lemons. Boil until the rind is perfectly transparent. If you like the taste of ginger, add a few pieces of the root, which will impart a high flavor, and is very pleasant when blended with the lemons. This preserve when candied is a very good substitute for citron in fruit cake and mince pies.

CITRON PRESERVES.—After having cut your citron in fanciful shapes, place them in a jar of salt water and let them remain three days and nights, then in fresh water two days and nights, and the same length of time in alum water. Scald them well in the alum water, drop them into fresh water, and let them remain one night, then boil in fresh water until transparent; cover them while boiling with grape leaves. Then make a syrup, allowing two pounds of loaf sugar to one of citron, and boil like preserves.

APPLE JELLY.—Pare, core and slice your apples; place them in a pan, and pour in water enough to cover them; stew them gently until they are soft, then turn them into a jelly bag; let all of the syrup run through without pressing it; then to each pint of this juice put one pound of loaf sugar and boil it to a jelly.

GREEN CORN LUXURY.—Take a dozen ears of green corn, (sweet is best,) and, without boiling, grate or scrape off the grains. Into this stir two tablespoonfuls of flour, also a well beat-

en egg, a little salt, a couple of spoonfuls of sugar, and, lastly, about a gill of sweet milk and a small lump of butter; stir all together well and bake in a well buttered tin pan for one hour in a hot oven. Eat with butter and sugar or sweetened cream.

QUINCES FOR TEA.—Bake ripe quinces thoroughly; when cold strip off the skins, place them in a glass dish, and sprinkle them with white sugar. Serve with rich cream. This makes a beautiful dish; it is simple and inexpensive, also a general favorite.

HOW TO COOK EGG PLANT.—Peel and cut the plant in thin slices; soak in salt and water half an hour; drain them, and steam five minutes. Make a batter of one pint of sweet milk, half cup of butter, two eggs, one teaspoonful of cream tartar, half ditto of soda; mix with flour to the consistency of batter cakes; dip the slices into the batter and fry slowly in butter till a light brown; season highly. They are nice for breakfast or dinner.

TO TAKE STAINS OUT OF SILVER.—Steep the silver in soap lye for the space of four hours; then cover it over with whiting wet with vinegar, so that it will lie thick upon it, and dry it by a fire. After which rub off the whiting and pass it over with dry bran, and the spots will not only disappear, but the silver will look exceedingly bright.

CUCUMBER CATSUP.—Pare ripe cucumbers and grate them, seed and all, and to three pints of the pulp removed from the juice of the cucumber add one pint of good cider vinegar, salt, and pepper to the taste, and if agreeable a little onion. As soon as made, it is ready for use. Keep in a cool but not damp place.

WATERMELON PICKLES.—Ten pounds of watermelon rinds boiled in pure water until tender; drain the water off, then make a syrup of two pounds of sugar, one quart of vinegar, half an ounce of cloves, and one ounce of cinnamon. The syrup to be boiled, and poured over the melon rind boiling hot. Drain the syrup off and let it come to a boil and pour it over the melons three days in succession. The rind, prepared in this way, makes a very fine pickle, and if carefully bottled will keep a long time.

CREAM BEER.—Two and one-fourth pounds of white sugar, two ounces tartaric acid, juice of one lemon, and three pints of water; boil together five minutes. When nearly cold, add the whites of three eggs beaten to a froth, one half cup of flour well beaten with the egg, and half an ounce of wintergreen essence, or any other kind preferred; bottle and keep in a cool

place. Two tablespoonfuls of this syrup in a tumbler of water, with one-fourth teaspoon of soda. It is ready for use as soon as made, but age improves it, and it will keep any length of time. Shake the bottle well before using.

PICKLED DAMSONS.—To one peck of damsons allow seven pounds brown sugar, half pint of vinegar, two tablespoonfuls of ground allspice, the same of cloves; let the sugar and vinegar boil, and to the mixture add the damsons and spice. They should boil two and a half hours, being constantly stirred. When cold they are fit for use, and are very nice served up with roast turkey, beef, lamb, etc. Keep in a dry, cool place.

APPLE PICKLES.—Sixteen pounds of apples, four pounds of sugar, one pint of vinegar, half pint of water, one ounce of cloves, one ounce cassia buds; steam the apples five minutes; put the spice into a bag and boil with the other ingredients until the strength is extracted; then pour hot over the apples. It will be fit for use in a few days.

From the Southern Horticulturist.
Preserving Fruit.

CANNING fruit for winter use has within the last few years become quite common in nearly every family, though there are still some who have not practiced it. For the benefit of those who are not familiar with the details of canning we copy the following from the *Health Reformer*, which gives full directions:

"Correspondents are inquiring as to the best methods of preserving fruits of various kinds, and we have taken pains to learn the most reliable methods, in order to meet the wants of our readers.

"By 'preserving,' we do not mean the old fashioned plan of converting fruit into an indigestible, unwholesome mass, by 'adding a pound of sugar to a pound of fruit,' by which it is prepared not only to resist decomposition, but the action of the digestive fluids as well; but a method by which this important constituent of a hygienic dietary, and especially the more perishable varieties, may be made available for use out of their season.

"Much has been written upon this subject, and many methods recommended as 'the best,' but success in this, as in other departments of the culinary art, depends more upon careful attention to details, and the exercise of good judgment, than upon this or that particular method.

"**CANNING.**—The best method to preserve fruit with all its original flavor is by hermetically sealing it from the air, in cans prepared for the purpose; and these should be of glass or stone ware, as the acids of fruit act chemically on tin or other metals, often destroying the flavor of the fruit, and sometimes rendering it very unwholesome. Either self-sealing cans,

or those which require wax, may be used successfully, but probably the former are best for those of little experience, and they are unquestionably more convenient. Of these there are several claimants for public favor, all of them highly recommended, and doubtless all of them good. Our own experience favors the 'Mason' and the 'Hero.'

"**THE SELECTION OF FRUIT.**—This should be done with the greatest care. Some varieties cannot be preserved at all, unless canned when perfectly fresh, and success is more certain with all kinds if this particular is regarded. The fruit should be nearly or quite ripe, but not over-ripe, and any which bear signs of decay must be carefully excluded.

"**COOKING THE FRUIT.**—Nearly all varieties are better steamed than stewed or boiled, and this for three reasons: 1. The first is not so badly broken and mashed; 2. It retains more of its original flavor; 3. Little or no water is required to be added, and it is therefore cooked in its own juice.

"Almost every family has conveniences for steaming on a small scale, either with the common tin steamer or the elevated platform, which can be used in a common kettle. To those who wish for more ample facilities, we would recommend the following cheap and simple method: Take a common wash-boiler, and having fitted into it a horizontal platform of sheet-iron, perforated freely with half inch holes so as to allow the free passage of steam. Have it mounted upon legs so it will stand clear from the water, which should be only a few inches deep in the bottom of the boiler.

"Have your fruit carefully picked over and placed in a clean tin or earthen dish, with a cover over it to prevent the condensed steam from dropping into it. No sugar is required with any kind of fruit. We are informed by one who is always successful in this business, that the flavor of the fruit is better preserved without sugar, and she never lost a can. If sugar must be used, it can be added when the cans are opened for the table.

"Place your dish of fruit on the platform of your steamer, having sufficient water in the bottom, but not too much. Then cover the whole closely, and steam until thoroughly scalded. Some kinds of fruit require a longer time than others, and judgment must be exercised in regard to the matter. It should not be cooked so as to fall to pieces, but care should be taken to have it thoroughly scalded.

"While the fruit is cooking, the cans should be prepared. Several methods have been recommended, but perhaps the following is the best: Have your cans thoroughly cleansed, and pour into each a small quantity of tepid water. Shake thoroughly, until the can is of a uniform temperature. Then add a little warm water, shaking as before; then a little hot water, and so on until the can is hot. This is one of the best safeguards against breakage, and nearly as expeditious as any method. This should be done just in time, so that the cans will be all ready for the fruit as soon as done. While placing the fruit in the cans be careful to protect them from currents of air, as they are fre-

quently broken by a simple draught of cold air. "The fruit may now be poured into the cans. Peaches, pears, or other large fruit, may be tastily arranged in the cans with a fork, piece by piece, and the boiling juice added afterward to cover them. When the can is full, shake it, and incline it back and forth, so as to cause the air to rise to the top, if any should be among the fruit. Be sure that the can is full to the brim, and then screw on the cover, or if not a self-sealing can, put in the cork and cover with melted sealing wax. The following receipt makes good wax: One pound of rosin, two ounces of beeswax, one and a half ounces nut-ton tallow. Melt and mix.

"All the above work should be performed expeditiously. The cans may then be set away to cool, and should be kept in a cool, dark place and closely watched for a few days, to see that the sealing is perfect. If the fruit shows signs of not being perfectly sealed, it should be at once taken out, scalded and sealed again.

"Tomatoes, berries, and small fruits may be preserved in stone jugs. Observe the same rules in preparation, heating the jugs thoroughly before putting in the fruit. When filled, place one or two thicknesses of cloth over the mouth and then put in the cork, covering the whole with wax.

"By close attention to particulars, and the exercise of good judgment, success is almost certain."



THE APIARY.

OCTOBER.

WHEN taking honey to market let the boxes ride bottom upward, as there is less danger of breaking the combs. Weak colonies may be strengthened or new ones formed by taking up light stocks for neighbors.

Our best apiarians all agree upon one thing, which is, that bees will store more honey in the body of the hive than they will in top boxes. For this reason, and the advantages in supplying needy stocks for winter, we prefer to have a part of the surplus stored in frames. Whenever honey is taken from the hive, it should be set into boxes or hives, and taken to a dark room and kept until fall, when some may be needed in preparing stocks for winter. Some should also be kept on hand for emergencies, and the rest may be sold or used in making new colonies with bees obtained by taking up light stocks for neighbors.

There are enough in almost any community

who are so far behind the age as to hive their late swarms in box hives without uniting them. These and other light stocks they brimstone in the fall, *unless* they can get the "bee man" to take them up for the bees. Every bee-keeper whose apiary is not fully stocked, and all who wish to make the most money out of their surplus honey, should prepare to take as many such swarms as they can supply with frames of honey to winter upon. The process of taking up a swarm is nearly the same as for transferring. Have a small box with a hole in each side covered with wire-cloth for ventilation. As each comb is taken out brush the bees to the entrance of the box, and when all are in close it up. As it does not pay to winter small swarms, we usually put two or more together, and if no queens were removed all but one will be killed. The empty combs are valuable to use in honey boxes and frames in the body of the hive, and may be purchased at the market price of beeswax. Fasten them into frames with melted rosin, and use them to fill out the hives after giving each swarm four or five combs of honey. If this be not done the space should be contracted by inserting a partition board or a frame with a cloth tacked upon it. Each swarm should also have some bee-bread, which may be got by exchanging with old stocks.

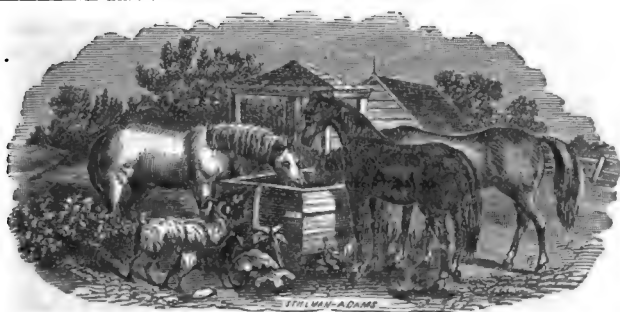
FEEDING BEES.—If it desired to winter light stocks, and *all* the honey, either in frames or boxes, has been *imprudently* used or sold, the best feed that can be given them is strained honey, by pouring it into the combs, or allowing them to take it from shallow pans placed in the chamber of the hive. The feeding should be done early in October, that the cells may be sealed over, as far as possible, before cold weather, for unsealed liquid absorbs impurities, dampens the air within the hive, and thus renders the bees unhealthy.

Profitable Business for Women.

ONE of the most profitable as well as interesting kinds of business for a woman is the care of bees. In a recent agricultural report it is stated that one lady bought four hives for ten dollars, and in five years she was offered one thousand five hundred dollars for her stock, and refused it as not enough. In addition to this increase of her capital, in one of these five years she sold twenty-two hives and four hundred and twenty pounds of honey. It is also stated that in five years one man, from six colonies of bees to start with, cleared eight thousand pounds of honey and one hundred and fifty-four colonies.

When properly instructed, almost any woman in the city, as easily as in the country, can manage bees, and make more profit than in any other method demanding so little time and labor. But in the modes ordinarily practiced, few can make any great profit in this employment.

It is hoped a time is at hand when every woman will be trained to some employment by which she can secure to herself an independent home and means to support a family, in case she does not marry, or is left a widow, with herself and family to support.—*American Woman's Home.*



STABLE ECONOMY.

Cure for Swinney.

AN esteemed correspondent who has had considerable experience in the management of horses, has sent us the following recipe for the cure of Swinney, which he declares to be infallible:

“Mix half a pound of blistering ointment and half a pint of spirits of turpentine, and heat them over a slow fire until they are thoroughly blended. Between the forefinger and thumb take a pinch of the skin on the diseased shoulder of the horse, prick it several times with a large needle, and then rub in a part of the above mixture, repeating the rubbing for three or four days, until the shoulder is well blistered. When the blister heals, the swinney will be cured.”

Cure for Stagers in Horses.

THE following remedy for Stagers in horses is communicated by one learned in the veterinary art: “Give the sick horse a ball composed of six drachms of aloes and four drachms of ammonia, mixed with molasses. Repeat the ammonia every four hours in very obstinate cases, until the bowels are freely moved. Give injections of warm water (three or four quarts) every three or four hours, until action is had. Give the horse nothing to eat but wet bran mash, and after he becomes convalescent be careful not to give him heating food for several days. After the bowels have been well opened mix daily in the food three drachms of sulphate of iron and half an ounce of saltpetre.”

Hints about Stables.

IN the greater part of the United States, the stabling of stock in winter is a necessity, and it would be a decided improvement in some other sections where it has never been applied. Great improvements have been made in the construction of stables within the last few years, especially in the manner of erecting feeding troughs.

The high racks formerly erected over the heads of horses and cattle, from which they had to draw their food, scattering hay, seeds, and dust over their heads and into their eyes, have in a great measure been discarded. No one thinks of erecting them in newly-built stables at this day, and where they still hold a place in old ones, troughs should be substituted. Besides the injurious effects above named, the animal is obliged to assume an unnatural position to reach its food, and after reaching it, must change its position to masticate and swallow it.

We advise every one who still retains those racks in his stables to have them removed and substituted by troughs of modern plans, which are very simple and well suited to the uses for which they are intended; and to do this *now*, before the feeding season commences. If the improvement is postponed until then, there are nine chances to one that it will not be done, and the poor animals will have to go through another winter in the old star-gazing break-neck fashion to reach their food. The man who invented these over-head racks for feeding stock must have been a queer genius, and those who adhere to the system with such pertinacity a rather stiff-necked people.

Want of sufficient *light* is a great fault in a large majority of stables, and is very injurious to stock in more ways than one. To be shut up in comparative darkness day after day is very hard on the eyes. If a horse be led out of one of those stables into the open light, he is unable for a time to distinguish objects properly, and is liable to stumble and become alarmed until the eyes adjust themselves to their new position. The same difficulty occurs in entering the dark stable from the outside.

Darkness is injurious to the animal's health, which is easily proven by vegetables growing in dark places. Light is one of the great agencies that imparts health and vigor to both the animal and vegetable system, and being so very cheap ought to be liberally supplied. All stable windows should be glazed in moveable sash, and of such size as to admit a full flow of light. The division of light and darkness as measured by day and night should be the governing rule in both animal and vegetable economy.

Free *ventilation* of pure atmospheric air should be a prominent feature in every stable. Without this, the best state of animal health cannot be maintained. There are so many plans of accomplishing this, that each farmer

may choose the one that best suits his views. The great question is, will he do it?—*American Stock Journal*.

Cure for Founder in Horses.

A CORRESPONDENT of the *Western Rural* gives the following as the result of his experience with founder in horses, and his method of cure. He says:

"I was turning stubble ground; finished the field about four o'clock, P. M.; took the team to the stable; gave them their regular feed, a peck of oats; after supper hooked to the wagon; took a load of seed wheat to an adjacent farm, not returning till after dark. Through mistaken kindness I gave the horses each a gallon of oats to compensate them for the extra labor performed, they not being accustomed to more than three rations per day. The next morning, the old mare (fourteen years old) refused her oats, and examining into the cause, found she was foundered pretty badly. She was, however, harnessed to the harrow, as September is a busy month with farmers in the East. She showed considerable symptoms of pain, and her movements were sluggish and awkward—improving in sprightliness as she became warmed up. At noon she refused her oats, but partook of a little hay and chopped feed. At the suggestion of a neighbor, I tied clean sassafras bark (taken from the root,) around the bridle bit, as much as I could well put into her mouth, and put the bridle on in the evening, leaving it on all night; and the result was that she was effectually cured by two applications. Her oats were eaten up clean, and she was as supple and sprightly as her age would permit.

About a week later I harnessed a pair of three-year-old colts to the harrow; worked them a little too hard, as is easily done at this age, and took them to water. The young horse was effectually foundered. When I came to the pasture field for him the next morning he was in a recumbent position, and it was with difficulty I got him on his feet. His hoofs were very much inflamed. He stood with his back up, his hind feet and fore feet close together, and his appearance was so woe begone and dejected, that he was really an object of pity. A neighbor said I had ruined that black colt, and he never would be worth three cents. I was not willing to give up so soon. I tried the sassafras remedy, giving him three applications, as above. I do not think the third would have been necessary; after the second application he amused himself by running races through the meadow, where the day before he could scarcely stand. He is effectually cured, and I defy any one to trace the least vestige of this disease in his feet or anywhere else; and he neither had hoof rot nor navicular disease; but his feet were as they now are—sound as a gold dollar.

These are the only cases of founder I ever treated; the one a feed, the other a water founder; the one an old and the other a young animal; and both were effectually cured by the simple sassafras remedy.

Watering Horses.

HORSES should be watered from a brook, pond, or river, and not from wells or springs, as the well water is hard and colder, while the running stream is soft and rather warm. The preference of horses is for the soft, even though it be muddy water, to that which is hard. Horses should be allowed in summer time at least four waterings a day, and a half bucketful at a time, and in winter a pailful may be allowed morning and evening, which is sufficient to assuage their thirst without causing them to bloat or puff up. Care, however, should be taken that the horse is not put to work immediately after drinking a full bucket of water, especially if required to go fast, because digestion and severe exertion can never go on together, and, moreover, purging is apt to ensue. In some cases, broken wind or heaves is thus produced. Avoid giving warm or tepid water to horses that are often driven from home, because cold or well water will then perhaps be given them, which will be liable to produce a congestive chill, followed by long fever, and in some cases colic. When horses are thus carefully watered, if one or more of them should refuse their accustomed food, something is wrong, and they should not be taken out of the stable to work, or driven further that day; but an examination should be made as to the cause with a view to its removal.—*McClure's New Stable Guide*.

Veterinary Science—Hooks in Horses.

Editor of South-Land: I do not know if there is any right orthography for the word "Hooks," but such is the term used vulgarly to express a certain disease affecting the eyes of horses. What the technical name is I do not know, nor does it matter much for the purposes of this communication, provided the description or definition of the disease is sufficient to determine it exactly. It consists in the abnormal condition and inflammation of the organ situated in the inside corner of the eye, just where the lachrymal duct is situated. The usual treatment is extraction by cutting out with a knife, after catching up the organ with a hook or needle and thread. It is done by persons who do not pretend to any knowledge of surgery, and who consequently may do much mischief.

I shall give my experience in the matter by stating how I had a horse treated and cured by a Mexican, and they are supposed to know something about horses generally. The head of the horse was well besmeared and rubbed with tallow about twenty-four hours before, and again just at the time of the operation, which consisted in bleeding with a lancet or sharp-pointed knife, in the veins about two inches below the eyes, and promoting copious bleeding by a cord around the neck. It is well to tie the horses legs and throw him, so that he may hold still. In a few days the inflammation will disappear.—*South-Land*.

Be kind to all animals; they will repay you.



THE POULTRY YARD.

For the Southern Farm and Home.

Fowl Houses.

Mr. Editor: I have tried various sorts of Fowl Houses, and being fond of fine fowl and plenty of them, have gone to considerable expense in obtaining the choicest breeds, and in providing for their health and comfort. Though I am an advocate of many "modern improvements," I am satisfied that my fowl did better when they were "free to choose their place of rest"—when the sheds, cattle stables and trees in the farm yard were their roosting places—and before my love of order and dread of thieves induced me to build a fowl house according to the new ideas.

If we must have a fowl house, let it be high—fully nine or ten feet from the ground to the comb of the roof. In a lofty house the air is purified by ventilation above the roosting places, and the health of the fowl is thus uninjured.

The perches should not be more than two feet (or thirty inches from the ground, stout pine poles skinned and split in half are the best, and the perches should be all the same height, and not one above another, like seats in a theatre, as is generally the case. When the perches are several feet from the ground, the fowl frequently become lame by the violence of their fall in flying down in the morning. Fowl ladders do not provide a remedy, because, while fowl will soon learn to ascend on them to the perch, they never use them to descend.

Ventilation is essential to health, and the ventilators should be kept open in fair weather, closed only when it is very severe. Cleansing every day or two and frequent whitewashing are also necessary.

I have found an earthen floor, smooth and firm, covered with about two or three inches of loose sand, to be the best.

The opening of the house should be towards the South, and this should only be closed in the most inclement weather, in order that the fowl may be able to get out at dawn.

If there be plenty of space, and material and expense be no object, I would recommend that the house be divided into three chambers or divisions,—one for roosting, one for laying, with laying boxes on the floor and against the sides of the house, and one for setting hens.

Laying and setting hens should never be allowed to occupy the same room, and no ducks, geese, turkeys, or guineas should ever be permitted to associate with the chickens in the same roosting place.

Cleanliness, ventilation, fresh water, a dry run, and plenty of ashes or sand are essential to the health of fowl.

In future numbers, if you permit, I will detail my experience of fancy breeds, and in buying choice eggs in Pennsylvania to be hatched in Georgia.

COCKALORUM.

Management of Poultry.

WARREN LELAND, proprietor of the Metropolitan Hotel, who keeps large numbers of poultry on his farm at Rye, New York, gives the following method of managing his poultry. It will interest all who think poultry can be made profitable when kept in large numbers:

"I have found that for every hundred fowls you must give up at least an acre. But rough land is as good as any. Hens naturally love the bush, and I lop young trees, but leave a shred by which they live a year or more. These form hiding places and retreats for them. In such places they prefer to lay. I have great success, and it depends on three or four rules, by observing which I believe a good living can be made by hens and turkeys:

1. I give my fowls great range. Eighteen acres belong to them exclusively. Then the broods have the range of another big lot, and the turkeys go half a mile or more from the house. The eighteen acres of poultry yard is

rough land, of little use for tillage. It has a pound in it, and many rocks, and bushes, and weeds, and sandy places, and ash heaps, and lime, and bones, and glass, and a place which I plow up to give them worms.

2. When a hen has set, I take her box, throw out the straw and earth, let it be out in the sun and rain a few days, and give it a good coat of whitewash on both sides. In winter, when it is very cold, I have an old stove in their house, and keep the warmth above freezing. There is also an open fire-place, where I build a fire in cool, wet days. They dry themselves, and when the fire goes out there is a bed of ashes for them to wallow in. Summer or winter, my hens have all the lime, ashes, and sand they want.

3. Another reason why I have such luck is because my poultry-yards receive all the scraps from the Metropolitan Hotel. Egg making is no easy work, and hens will not do much of it without high feed. They need just what a man who works requires—wheat bread and meat. Even when wheat costs two dollars, I believe in feeding it to hens. As to breeds, I prefer the Brahmas, light and dark. I change roosters every spring, and a man on the farm has no other duty than to take care of my poultry. I frequently turn off three thousand spring chickens in a single season.

Transporting Eggs Safely.

As it may be desirable for some of our readers to transport the eggs of choice fowls to a distance for hatching, we give the following excellent mode from the *London Farmer*:

As an experiment to test my mode of packing eggs, I sent five eggs more than one hundred and seventy miles by railway. They were absent three days, and twice traveled through London in the railway van. On their return they were placed with some other eggs under a hen, and four out of the five eggs were duly hatched.

These eggs were carefully packed, and the lid of the box screwed down. The only objection to oats as a packing material is, that sometimes, but very rarely, an egg may be pierced with the sharp end of an oat. I have only known, however, one or two instances of such an accident.

The plan I now adopt in packing eggs is to wrap each egg in several folds of newspaper, and then place a thick layer of cotton wool and straw, cut to the length of the box, both under and over the eggs, filling up every interstice with pledgets of cotton wool. This plan prevents any chance of the eggs being broken, and preserves their vitality as well as is done by the oats.

There is one thing I invariably do, and I think it ought to be done by every one who sells eggs for sittings, and that is to write on each egg, legibly with a pencil, the date on which it is laid.

Egg boxes should invariably have their lids screwed down. I have constantly received boxes of valuable eggs, of which not one has

hatched, and I believe solely in consequence of the lids being nailed down, the jar of the hammer destroying the vitality of the egg. No egg should be packed in saw-dust, nor should eggs more than ten days old be sent to any distance.

From Chambers' Journal.

Evening.

THE long crow-lines push woodward string on string,
And, whirring to their willow-beds away,
The dusky starlings beat with burnished wing
The golden air of the declining day.
Low down, the sun sets grandly; and the fields,
The rocks and trees, and the still pools, are dashed
With shifting showers of gold. The twilight steals
Up from the plain anon; anon, abashed,
As fearing to be seen, a star or two
Steal out faint, timid lights. One dear day more
The gluttonous Past, that hungering ages through,
Is never filled, unto her monstrous store
Hath safely added; and another time
Stern Night fulfils her mystery sublime.

The Jute Plant—Its Value, Etc.

THE Commissioner of Agriculture, Hon. Horace Capron, has imported through the American Consul at Calcutta, a small quantity of the seed of the Jute plant, with a view to introducing its culture into the extreme section of the Union south of the frost line. It is being distributed to planters in Texas and Florida, who will give it a fair trial. It is a fibrous plant, resembling coarse flax, of easy culture and rapid growth, with a comparatively large product. The crop when ripe is cut down to the roots, and after being steeped in water for a week or so, the bark slips easy, and the silky fibre is detached, cleaned, assorted, and packed in bales of three hundred pounds each. Its annual product in India is estimated at more than 800,000 tons. It is the material of which gunny bags and cloth, and bagging for cotton, as well as cheap cordage, mats and carpets are made. Its great use, however, is for baling cotton. As it takes about six yards to wrap a bale of cotton, a crop of 8,000,000 bales would require, of course, 18,000,000 yards of bagging. The machinery for making it in India is very rude; in fact, no progress has been made in it for centuries. But jute factories of colossal size have been erected in Great Britain, some of which employ two hundred hands, and work up 1,000 bales per week into bagging, sacking, sheeting, carpeting, duck, etc. In France some 10,000 tons of the raw material are consumed annually, and in our Northern States its manufacture is steadily increasing.

Jute is spun in machinery made on the same principle as that made for flax and hemp, but differing in size and proportion. It is more easily worked than either of these fibres, which fact, connected with the cheapness of the raw material, accounts for the rapid progress of the jute manufacture in Great Britain, compared with linen or hemp. After being used up as bagging, etc., it finds its way to the paper mills for the manufacture of coarse papers.—*The South-Land*.

The Southern Farm and Home.

MACON, GA., OCTOBER, 1870.

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WM. M. BROWNE, - - - - - Editor

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THE AGRICULTURAL CONVENTION.—We publish elsewhere a full synopsis of the proceedings of the Agricultural Convention, which unfortunately reached us too late for our September number.

We had the good fortune to be present at the Convention, and never have we seen a more intelligent, earnest, or patriotic body of men. It was encouraging to any lover of Georgia to hear their deliberations, to see how zealously they strove to promote the best interests of their State, and to feel how resolute is their purpose to labor actively in the good cause—the encouragement of Agriculture.

The Convention acknowledged their debt of gratitude to the retiring President, Hon. B. C. Yancey, by an unanimous vote of thanks, given in the most complimentary manner possible—all the members standing. Colonel Yancey well deserved this compliment. He has labored diligently, and often at great personal sacrifices of time, means and convenience, to promote the efficiency of the State Agricultural Society, and through its agency the agricultural interests of Georgia.

We cordially congratulate the Society on the election of General ALFRED H. COLQUITT as their next. He will fill the chair well and worthily. Georgia has fewer nobler sons than he, rich as she is in men of mark and merit.

SPECIMEN OF THE JUTE PLANT.—We acknowledge thankfully the receipt, from Mr. C. R. Nesbitt, of a specimen of the Jute Plant in blossom, which was grown in the suburbs of Macon, from seed obtained from Hon. Horace Capron, Commissioner of Agriculture, in the month of June, 1870.

VOL. 1.—82.

FAIRS TO BE HELD IN GEORGIA.—Georgia State Agricultural Society Fair, commences October 19th—continues eight days.

Central Georgia Agricultural and Manufacturing Company, Macon, commences October 8d—continues six days.

Agricultural Fair Association, Rome, commences October 11th—continues four days.

Cotton States Mechanics' and Agricultural Association, Augusta, commences October 25th—continues five days.

Columbus Industrial Association, Columbus, commences November 1st—continues five days.

Industrial Institute of Georgia, Savannah, commences November 8th—continues five days.

ACKNOWLEDGEMENTS.—We acknowledge with many thanks the receipt of invitations from Col. D. Wyatt Aiken to attend the approaching Fair at Columbia, South Carolina; from Mr. George T. Anthony, Secretary of the Kansas Agricultural and Mechanical Association, to attend the third annual exhibition of that Society, at Leavenworth City, Kansas, on the 18th to 16th ult., and from Mr. J. L. Power, Secretary of the Mississippi State Fair Association, to be present at the second annual Fair, which will commence at the city of Jackson on Monday, October 24th, and will continue for six days.

We sincerely regret our inability to have been present at the Kansas Fair, or to attend the coming Fairs at Columbia and Jackson. We return our thanks for the polite attention shown to us.

We acknowledge the receipt of a paper descriptive of the situation and attractions of a "Southern Colony," with a neatly executed diagram of the proposed division of the land, appended to which is an advertisement for Ramie Stalks.

As the paper is doubtless intended as an advertisement, and for the benefit of the proprietor of the colony, we can only publish it as such according to our rule, and at our published rates.

SCHOFIELD'S COTTON PRESS.—We beg the attention of our readers to the advertisement of Schofield's Cotton Press. From all we hear from those who have used this valuable machine, as well as from the high character of the manufacturers, we are led to believe that it is a most valuable invention, deserving to be classed among the best labor-saving machinery.

THE Commissioner of Agriculture has placed us under obligations by sending us a copy of a pamphlet containing a list of the Agricultural, Horticultural, and Pomological Societies, Farmer's Clubs, etc., on the books of the Department of Agriculture, together with the name of the President and Secretary of each.

ANSWERS TO CORRESPONDENTS.

CATCHING MOLES.—A young lady who says that she has been "worried to death all the summer" by moles in her garden, asks us to tell her how to "get rid of the pests."

We wish that we were able to do so. We have seen and tried every mole trap that has been presented for sale of which we have ever heard during the past four years. It may have been on account of our awkwardness, but the fact is, we never caught a mole in any of them. This year we promised our gardener twenty-five cents for every mole he caught in the garden. During the summer he caught six, and we think he "got rid of the pests." His implement was a common garden spade, and his *modus operandi*, watching for the moles in their track, and chopping them suddenly as they moved along.

GRASS FOR LAWNS.—A subscriber from Oglethorpe county desires to know what grass is best adapted for front yards or lawns, where to get the seed, and when to sow it.

We decidedly recommend Kentucky Blue Grass as the best for lawns. It is green all the winter, and once a good stand is obtained it is easily kept up. The seed can be had from any respectable seedsman in Kentucky. The time for sowing is the middle or end of this month. The ground should be rich, very finely pulverized, the seed should be sown very thickly, and *lightly* brushed in, and then the ground should be rolled.

RUTA BAGAS.—An esteemed friend sends us the following:

"I followed your advice about planting for a big crop of turnips, and also selected Ruta Bagas for my main crop. I bought excellent seed (so called,) sowed it exactly as you recommended, and to-day (September 7.) after sowing and re-sowing, and sowing again—the last time just before a rain—I have the worst stand and the poorest chance for turnips I ever had. Now, General, where is the fault?"

It is difficult to say. Our friend may have bought poor seed, or, as often happens, he may

have covered them too deeply. It is not always easy to procure really good Ruta Baga seed, and when it is covered too deeply it is very hard to get a good stand. We have heard of several failures this season, and are rather inclined to think we made one ourself, but just before the late rains we sowed the missing places with Norfolk turnip seed and have a fair promise.

TULIPS.—M. C., of Baldwin county, who promises to be a subscriber "as soon as he or she gathers his or her crop," asks us where the best double tulip bulbs can be procured, and when they should be set out. M. C. has bought a number of bulbs from pedlars, but they all turned out common and poor varieties.

Any Northern nurseryman of reputation can furnish good bulbs. Personally, we mean to replenish our collection from James Vick, of Rochester, New York. He sent us first-rate flower seeds, and we have no doubt whatever that he will send reliable tulip sets to all who apply to him.

THE WAR IN EUROPE.—We have received quite a number of letters, during the early part of the past month, asking us to give our views as to the war between France and Prussia—"who would whip," etc. We suppose it is now hardly necessary for us to express any views, or to answer the question, "who would whip?" That question has been terribly answered in a manner which, we frankly own, we did not believe was possible.

COMPENSATION OF LABORERS.—A Mississippi planter writes urging us to give our opinions as to the "best mode of compensating negro laborers for plantation work." The question involves considerations of too great importance to be answered off-hand. We shall endeavor in our next number to say what we think about it, confining ourselves for the present, to agreeing very decidedly that the share-of-the-crop system will neither pay employe or laborer, except in very exceptional cases.

GRAPE VINES.—A subscriber asks what grape is best suited to the climate and soil of Northern Georgia. We have succeeded very well with the Clinton and the Concord, and have gathered an abundance of fine fruit from a few Catawissas. We suppose our correspondent refers to imported grapes. If he refers to those that are indigenous to America, we recommend the Scuppernong as the best, most prolific, most hardy, and most uniformly productive.

WHITEWASH.—A “plain farmer,” who desires to make “things look neat around him,” desires to know what is the cheapest paint he can get for fences, out-buildings, etc. The Light House Board of the United States Treasury Department recommend the following for wood, brick, or stone, as almost as good as oil paint, and very much cheaper :

“Slake half a bushel of unslacked lime with boiling water, keeping it covered during the process. Strain it, and add a peck of salt, dissolved in warm water and boiled to a thin paste; half a pound of powdered Spanish whiting and a pound of clear glue, dissolved in clear water; mix these well together, and let the mixture stand for several days. Keep the wash thus prepared in a kettle or portable furnace, and when used put it on as hot as possible with painters’ whitewash brushes.”

BOTTOMS’ HORSE POWER.—Our esteemed correspondent, Mr. Geo. D. Nicholls, of Natchez, Miss., asks us if “we know personally whether Bottoms’ Horse Power is a success; and can the power be applied to a circular saw?”

We have bought one of these powers for our own gin-house, and for threshing wheat, and though we have not yet tried it personally, are satisfied that it is a success, because several of our friends, who have tried it, pronounce it to be so. We do not know of its application to a circular saw, but have no doubt it could be so applied with complete satisfaction.

We take this occasion, in replying to his questions, to thank Mr. Nicholls for his kind interest in the *FARM AND HOME*, and his efforts to extend its circulation.

INDEX TO VOLUME I.—We regret that we have been unable to complete the Index in time for this number. It will be finished in time to be sent out with our next. The delay was unavoidable.

PARTIES who send us letters or circulars, inclosing advertisements; if they wish them inserted, would do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we now have, are liberal enough.

PERSONS sending orders for articles advertised in our Magazine, are respectfully requested to state in their order that they saw the advertisement in the *FARM AND HOME*.

For the Southern Farm and Home.

Georgia.

BY DR. TICKNOR.

BETWEEN her Rivers and beside the Sea—
My mother-land! What fairer land can be!

The lyric rapture in her leaping rills—
The crown-imperial on her purple hills.

Her lips are pure that never breathed a curse:
Her hands are WHITE before the universe.

Behold the witnesses of the King of peace
Clear, in the splendor of her dew-lit fleece.

And lo! the midnight of her shrouded MINE
Garners the radiance of the years to shine.

Yea! the swart Gnome that bides his time below
Shall rise at last in full regalia glow!

And the great Alchemist shall teach the Sun
That Earth’s great gloom and Life’s great Light are
ONE!*

Oh! SWEETEST SOULS that ever rose by prayer
White from the *furnace-dungeon* of despair!

That wrought new Grace, from battle’s chaos mould
And reared new shrines from ashes not yet cold!

Not cold! from flames the *strangest* that have given
From all this world, an altar-smoke† to Heaven!

Crowned—on the cross! above high-fetter line,
They smile on hate with Love’s own smile divine.‡

Prouder than Hills that plume thy star-ward crest,
Sweeter than dales that dimple at thy breast—

Richer than Rome! when God’s great chariot rolls,
Imperial GEORGIA! count thy children’s souls.

* The coal and the diamond! the gloom and the glory.

† Tecumseh’s way.

‡ Such Georgians as A. H. Stephens, T. R. R. Cobb, and many others, illuminate this text.

For the Southern Farm and Home.

THE OLD HOMESTEAD.

A STORY OF RURAL LIFE.

PART I.

AROUND the old homestead, autumnal winds chanted a solemn dirge as they showered upon the aged roof myriads of golden-hued leaves from trees that had sheltered it from the burning rays of many a summer sun. It was a grand old place, with huge forest oaks entwining their sturdy arms protectingly over the eaves of a large irregular building, which had been the happy home of several generations of Middletons. In the back ground, beyond broad fields of emerald, rose a succession of hills tinted by the frosty breath of the dying year with gorgeous hues of crimson, orange and gold, together with the most delicate colors that ever adorned the canvas of Claude Lorraine.

The funeral-like dirge of the moaning winds but echoed the feelings of sad hearts within the silent house ; for the lifeless form of a beloved husband and father had a few days previous been borne from thence to its last resting place in the quiet valley. Now the lonely bereaved widow, with an aching void in her heart, and a feeling of utter desolation, has striven to arouse herself for the sake of the dear ones who are spared her. With an elbow upon the table by which she sat, and bowed head resting within the palms of her fair, delicate hands, she awaits the coming of her sons, who are to decide what avocation and path of life they will pursue in future.

As a brilliant panorama, the scenes of her happy, wedded life have been passing in review, but now the curtain falls, and all is darkness and impenetrable gloom. In mute agony she bows her head, until like a hidden gem suddenly revealed, God's mercy and a Saviour's tender love illumined the prospect. A flame of hope springs anew from the ashes of despair, and tears, sweet tears, sorrow's only balm, the first she had shed since her great bereavement, relieved her burning brain, and she softly murmured :

"O, God, Thy will be done."

The door opened gently, and a pale, handsome youth of nineteen or twenty years of age entered the room, with that noiseless, cautious step adopted in a house of mourning and observed from force of habit long after the beloved body has been consigned to its lonely sepulchre. His face assumed a more pallid hue as he discovered the bowed, grief-stricken figure, and approaching he threw his arms tenderly around her, and, falling upon his knees, drew her head gently to his bosom and said :

"Mother, dear mother, for your children's sake, be comforted."

She responded silently to his affectionate embrace, and allowed her throbbing head to remain for some time quietly on its resting place. In a voice tremulous with emotion, the youth added :

"O, mother ! I would have sacrificed my life cheerfully if the act could have averted this dreadful blow, which has crushed your dear heart and blighted the happiness of our household ; but as I could not alter the decree of an omnipotent God, I solemnly vow to devote myself to your comfort so long as we both shall live. Come what may, my mother's happiness and interest shall be dearer to me than that of

all others, and in my heart she shall ever reign supreme, so help me God."

She raised her head, and with tearful eyes bent tenderly upon him, calmly said :

"My dear Arthur, I fully appreciate the motive which prompts your affectionate heart, but am not so thoroughly selfish as to require or accept a vow of that nature from my son, who has never been deficient in filial love or obedience. Your generous, thoughtful consideration of my comfort merits due recompense, and with God's help I will endeavor to subdue all selfish, rebellious feelings, and live hereafter for the interest and future welfare of my children. I now recognize the hand that smote me, and bow in humble submission to the rod. 'The Lord gave and the Lord hath taken away ; blessed be the name of the Lord.' In the language of Israel's sweet psalmist, God's favored one, I can now say with faith, 'I shall go to my husband, but he shall not return to me.' Therefore I will dry my eyes, and strive to be worthy of the blessings which a merciful Benefactor has bestowed upon me. Whatever I believe is for the happiness and interest of my children I will accept, regardless of all personal considerations. Therefore, in the adjustment of your affairs and arrangements for the future, I beg that your own happiness may be the primary object."

The door again opened, and a young man of fine prepossessing appearance, several years Arthur's senior, entered the room and approached the table with a business-like air. His well-arranged toilette indicated a more thorough knowledge of *le beau monde* than that displayed by his brother ; while a certain quick, restless manner proclaimed him a frequenter of the busy haunts of life.

As he observed his mother's countenance, over which hope and resignation had cast a tender, radiant beam, like the first soft rays of sunlight upon the darkened earth, his own brightened, and he remarked pleasantly :

"I am rejoiced to see that you are feeling better, mother. Indeed you are looking almost yourself again, and I sincerely hope the improvement in your appearance may be the harbinger of a bright and happy future. We have paid the last respect possible to the dear departed one, and our duty is now to the living ; therefore, after a careful examination into father's affairs, I have come to consult with you as to their final settlement."

As he concluded, he seated himself at the table. With a smothered sigh she motioned Arthur to take a chair by her side, and replied :

"You have spoken truly and acted wisely in making the investigation before coming to me. Now I am prepared to hear all that you wish to say."

Thus encouraged, after a moment's hesitation, he observed :

"I regret to say we find the estate in a much more embarrassed condition than I expected. The low price of cotton last fall, and the payment of that enormous security debt for Aunt Julia's husband, has left us a mere pittance beside the landed estate and legacies left to Arthur and myself by our grand-mother. And in order to make a division and enable me to enter the mercantile house of Uncle James, as father intended, I propose to dispose of the homestead and land to Colonel Weston, who offers a liberal sum."

A sudden exclamation from his mother and the death-like pallor of her face arrested his speech and brought both of the young men to her side. Waving them back, she cried in unnatural tones :

"O, William ! I was not prepared for that ! Surely such a sacrifice will not be required of me. Do not ask me to resign my beautiful home, the only spot on earth where life would be endurable. Here your father brought me, a happy bride ; by his hands it was beautified for me, with a desire that our days should end beneath its ancient roof. It is the birth place of my children, and is endeared to me by a thousand recollections of the purest happiness the human heart can ever know. Take from me all I claim beside, but leave, O leave me still my children and my home."

Arthur rose to his feet, and with flushed face and flashing eyes confronted his brother, saying :

"William, how dare you insult mother and the memory of our father by making such a sordid, heartless proposal ? It would be an everlasting stigma and reproach to our manhood should we, two strong, healthy young men, with liberal educations, voluntarily close the doors of this noble old homestead, which has sheltered so many generations of high-toned gentlemen and lovely women, against our mother, for the purpose of dividing a paltry sum of money. It shall never be done so long as I have an arm to struggle for my childhood's home."

His clenched hand was brought down with such force upon the table that it threatened to shatter a flower vase standing near. William's face crimsoned with anger and mortification at the rebuke of his younger brother, while his

mother trembled with alarm at the unexpected ebullition of temper in her gentle boy and its effect upon her more impulsive son. Wishing to calm the rising storm, she remarked with forced composure :

"Arthur, my dear boy, restrain yourself ; this excitement is altogether unnecessary. Your brother has only suggested a plan, but I still hope it is optionary with me whether the proposition will be accepted. Of course he could not appreciate my feelings in this matter until I had given expression to them, or that suggestion would never have been made."

"Certainly not, mother ; I am glad that you understand me. Indeed it was first proposed by Uncle James, who, knowing my intention to locate in the city, and supposing that Arthur would object to planting, and carry out his intention to travel in Europe after leaving college, concluded it best for you to make your home with him for the present. That arrangement met with my approval, even before an investigation of father's affairs showed us the impracticability of holding the estate."

The weary, heart-sick woman bowed her head and pressed her trembling fingers to the aching brow, to arrest its throbbings while she viewed the case in its new and strange aspect.

Arthur gazed for a moment with loving compassion upon her, and, turning to his brother, said sternly :

"William, I cannot comprehend why you should persist in torturing mother in this manner. If I understand correctly, the estate is but slightly involved, and you only wish to dispose of it to make another investment."

William replied : "Uncle James thinks that prudence demands it, since we have but little besides, and neither you nor I intend to adopt planting as a profession."

"Does he wish to wreck his sister's happiness and bring her prematurely to the grave, because her willful sons refuse to follow the honorable occupation of their father ? Neither of you have the right to dictate or force her into measures against her will, and I will use my influence to prevent selling the property as long as I can honorably do so. Take my legacy and appropriate it as you think proper ; that, together with the proceeds of the crop on hand, will enable you to put into execution your plan. But leave our home in peace to mother and myself, as I shall not return to college nor go abroad for several years to come. I expect to remain here and cultivate the lands that have

heretofore yielded an ample support for the family."

A gentle light broke through the storm-clouds, and the stone was rolling from the mother's heart, as she raised her head, and in tones that thrilled her younger son with ecstasy, exclaimed:

"God bless you, Arthur! Your generous conduct has raised your mother from the depths of despair. God bless your self-denial and thoughtful kindness towards me! But, in justice to you, is it right for me to permit the sacrifice of your long-cherished hope? God forbid that I should wrong you! But He who knows my heart must see that I conscientiously believe it is for your interest to retain the estate."

"Mother, I beg that you will not allow any unpleasant thoughts to disturb you. It is no sacrifice, but simply a delightful duty. The pleasure and excitement of foreign travel would never compensate me for the loss of home and mother."

Turning to his brother, he asked:

"Does that arrangement meet with your approbation, William? Will you transfer your interest in the estate to us upon the terms I proposed?"

"Certainly I will, since you both are so reluctant to have it fall into other hands. Yet, believe me, it was for our mutual benefit that I advised selling the property, which will rapidly decrease in value every year, and investing the proceeds in the city, which would afford a handsome income for us, and allow mother to spend her future life in ease and luxury."

She replied: "William, an aged tree will not flourish when removed from its forest home; it is only the tender shoots that will bear transplanting into foreign soil; therefore, it would be a sad error—a mistaken kindness—to introduce me to the giddy whirlpool of fashion. I regret that you cannot be content with the quietude of country life, instead of engaging in the perplexing cares of merchandise. However, I will not endeavor to alter your purpose, as I fear already Arthur's determination to remain at home and discontinue his studies, of which he is so passionately fond, will be a constant source of regret to him."

Arthur remarked: "Mother, you are unjust to me and torture yourself with unnecessary fears. Under existing circumstances I should not be content in any other situation than the one I have fully decided to occupy. It is true that when father was in health and strength and

reputed to be a man of wealth, I contemplated pursuing a different course for several years to come, but expected still to end my pilgrimage here. You have all misjudged me in supposing that a fondness for study would prevent my having a due appreciation of agriculture, the most ancient and certainly the most important of all arts. On the contrary, it has taught me to venerate the science as highly as it was done by the nations of antiquity, who considered it a gift from their gods. The wealth and power of Egypt, whose splendid cities and wonderful monuments are unparalleled in the history of the world, was derived from the cultivation of the fertile delta of the Nile. From that country Greece borrowed the art. The Chaldeans were a wandering tribe until the science was introduced among them; thereby forcing them to adopt settled habitations to procure a sure and permanent support; and then arose the great city of Babylon, with its magnificent hanging gardens and splendid palaces and temples. The Carthaginians held agriculture in high esteem, and carried it to great perfection. Ancient Romans venerated the plow, and in the palmiest days of the great Republic her most illustrious citizens deemed it an honor to be called a skillful husbandman. As a voucher for this, every intelligent youth in the country remembers the history of Cincinnatus, who was called from his plow to the dictatorship, and after subduing the enemies of his country, returned to his rural employment. The adoption of agriculture as a profession will not interfere with my fondness for literature, since we have numerous instances in our own country of eminent men who combined the two with profit and pleasure."

William observed: "I will no longer urge any objection to your plan, as it will be useless; but before a transfer of the property is made, I must inform you that the most rigid economy will be necessary in the management of the estate in order to enable you to retain it for any length of time. I regret that mother should be denied any of the comforts and luxuries to which she is accustomed, and to avoid that, I hoped she might be induced to become a member of Uncle James' household until I could prepare a suitable home for her."

"My son, the comforts and luxuries that I shall enjoy hereafter will not lighten our purses. A palatial residence with gilded surroundings could never be to me like home, sweet home. Nevertheless, I thank you for your affectionate consideration. Let me remain here in peace and quiet; Arthur and I will prepare for threat-

ened evils, and with faith and trust in a merciful Benefactor, our handful of meal and little cruse of oil will last until winter has gone and harvest comes again."

"I will submit to your wishes, mother, although my fears as to the propriety of your remaining here are by no means quieted; and after consulting an attorney about the legality of the proposed arrangement, I will accept Arthur's proposition without further delay. The only difficulty we shall have to contend with, and one that has been entirely overlooked in the discussion is, his inability to act for himself, as he is minor."

The sudden discharge of a pistol from the speaker's hands could not have startled his companions more than this unexpected and truthful remark, which demolished their hopes as completely as a tangible body would have been shattered by the explosion of that deadly weapon.

(TO BE CONTINUED.)

To Advertisers.

OUR ADVERTISING RATES are published in full below, for the information of our friends and patrons.

RATES OF ADVERTISING.

One full page, first insertion,.....\$25 00
each subsequent insertion.... 20 00
half year.....100 00
one year.....200 00

	1 mo.	2 mo.	3 mo.	4 mo.	5 mo.	6 mo.	9 mo.	12 mo
1 col	15 00	26 00	36 00	45 00	53 00	60 00	80 00	100 00
1/2 "	13 00	23 00	30 00	37 00	43 00	48 00	64 00	80 00
1/3 "	12 00	20 00	27 00	33 00	38 00	42 00	56 00	74 00
1/4 "	10 00	17 00	23 00	28 00	32 00	35 00	47 00	62 00
1/5 "	7 00	12 00	16 00	20 00	24 00	28 00	40 00	54 00
1/6 "	5 00	10 00	14 00	18 00	22 00	25 00	33 00	45 00

Less than 1/6 column, 20 cents a line each insertion.

Bills of regular advertisers payable quarterly in advance. Transient advertisers always in advance.

Papers containing the first issue of each advertisement, always mailed to the advertiser free.

All advertisements should be received here by the 15th of the month previous to that in which they are expected to appear, in order to insure their insertion.

Parties who send us letters or circulars, enclosing advertisements, if they wish them inserted, will do well to look at our published rates. These are fixed and open for inspection, and we have not time for correspondence with those seeking a relaxation of our terms, which, considering the wide circulation we shall have are liberal enough.

Railroad Schedule.

Central Railroad Passenger Trains.

Leave Macon.....	7 00 A. M.
Arrive at Savannah.....	5 30 P. M.
Leave Savannah.....	8 00 A. M.
Arrive at Macon.....	6 40 P. M.
Connects at Millen for Augusta.....	12 50 P. M.

Night Passenger Trains.

Leave Macon.....	6 25 P. M.
Arrive at Savannah.....	5 15 A. M.
Leave Savannah.....	7 20 P. M.
Arrive at Macon.....	6 55 A. M.
Connects at Millen for Augusta.....	11 50 P. M.

Macon & Western Railroad Passenger Trains.

Leave Macon.....	7 55 A. M.
Arrive at Atlanta.....	2 10 P. M.
Leave Atlanta.....	7 55 A. M.
Arrive at Macon.....	1 40 P. M.

Night Freight and Passenger Trains.

Leave Macon.....	8 50 P. M.
Arrive at Atlanta.....	4 46 A. M.
Leave Atlanta.....	7 18 P. M.
Arrive at Macon.....	3 25 A. M.

Southwestern Railroad Passenger Trains.

Leave Macon.....	8 00 A. M.
Arrive at Eufaula.....	4 58 P. M.
Leave Eufaula.....	7 45 A. M.
Arrive at Macon.....	4 50 P. M.
Connects with Albany branch train at Smithville, and Fort Gaines branch train at Cuthbert.	

Eufaula Night and Accommodation Trains.

Leave Macon.....	9 00 P. M.
Arrive at Eufaula.....	10 00 A. M.
Leave Eufaula.....	5 10 P. M.
Arrive at Macon.....	5 07 A. M.
Connects at Smithville with Albany train on Monday, Tuesday, Thursday and Friday nights. No train leaves on Saturday nights.	

Columbus Passenger Trains.

Leave Macon.....	7 35 A. M.
Arrive at Columbus.....	1 20 P. M.
Leave Columbus.....	12 30 P. M.
Arrive at Macon.....	6 00 P. M.

Columbus Night Passenger Trains.

Leave Macon.....	8 15 P. M.
Arrive at Columbus.....	4 27 A. M.
Leave Columbus.....	8 05 P. M.
Arrive at Macon.....	4 20 A. M.

Macon & Brunswick Passenger Trains.

Leave Macon.....	9 10 A. M.
Arrive at Brunswick.....	9 35 P. M.
Leave Brunswick.....	4 45 A. M.
Arrive at Macon.....	6 10 P. M.

Trains to Hawkinsville.

Leave Macon.....	3 00 P. M.
Arrive at Hawkinsville.....	6 30 P. M.
Leave Hawkinsville.....	7 00 A. M.
Arrive at Macon.....	10 30 A. M.
This train runs daily, Sundays excepted.	

Georgia Railroad Day Train.

Leave Atlanta.....	5 00 A. M.
Arrive at Augusta.....	3 45 P. M.
Leave Augusta.....	7 00 A. M.
Arrive at Atlanta.....	5 30 P. M.

Night Train.

Leave Atlanta.....	5 45 P. M.
Arrive at Augusta.....	3 45 A. M.
Leave Augusta.....	10 00 P. M.
Arrive at Atlanta.....	8 00 A. M.

Day Passenger Trains will not run on Sundays. Passengers for Milledgeville, Washington and Athens must take Day Passenger Trains.

Western & Atlantic Railroad.

Leave Atlanta.....	7 00 P. M., 8 15 A. M., 3 10 P. M.
Arrive at Chattanooga.....	3 30 A. M., 4 20 P. M.
Leave Chattanooga.....	7 50 P. M., 7 00 A. M.
Arrive at Atlanta.....	4 14 A. M., 3 17 P. M., 11 00 A. M.

Cartersville Accommodation.

Leave Atlanta.....	5 30 P. M.
Arrive at Cartersville.....	8 06 P. M.
Leave Cartersville.....	6 00 A. M.
Arrive at Atlanta.....	9 00 A. M.

PRICES REDUCED!

One of the Greatest Books of the Age.

A PRACTICAL TREATISE

ON

AGRICULTURE.

TO WHICH IS ADDED THE AUTHOR'S PUBLISHED LETTERS,

BY DAVID DICKSON,

OF SPARTA, GA.,

EDITED BY DR. J. DICKSON SMITH,

**And Contains a Beautiful Steel Portrait of Mr. Dickson, engraved
Expressly for this Work.**

It is printed on heavy paper, from large clear type, making a large Royal Octavo volume, handsomely bound in four styles:

PAPER, without Portrait,	- - - - -	\$2 00
EXTRA CLOTH BINDING,	- - - - -	3 00
SHEEP	- - - - -	3 50
HALF MOROCCO	- - - - -	4 00

The work will be worth *a great deal more* to every planter than the price asked for it, as it embodies Mr. Dickson's entire system of Agriculture.

Agents wanted to sell this book in every County and State in the South, to whom liberal terms will be given.

Orders must be addressed to

J. W. BURKE & CO.,
MACON, GEORGIA.

LAWTON & LAWTON,
Fourth-Street,
MACON, - - GEORGIA,
Warehouse, Cotton and Commission
MERCHANTS,
AND GUANO DEALERS.

Advances made on Cotton in Store when desired.

Oct-1

CAROLINA LIFE INSURANCE COMPANY,
OF MEMPHIS, TENNESSEE.

JEFFERSON DAVIS, President,

M. J. WICKS, 1st Vice-President, J. T. PETTIT, 2d Vice-President, W. F. BOYLE, Sec'y.

THIS Company is rapidly and steadily obtaining a commanding position in the confidence of the South. Among the many reasons that commend it to preference, are the following:

1. It is, in its origin, its composition, its officers, and its investments, purely and strictly a **SOUTH-ERN COMPANY.**

2. The character and standing, both moral and financial, of its officers and directors are inferior to those of no other in the world, and afford the surest guaranty of its safety and stability.

3. In **ECONOMY** of administration it is unsurpassed, securing to policy-holders the proceeds of its profits, with the least deduction for expense of management.

4. It guarantees to *every policy-holder* the privilege of **BORROWING**, at any time after two years insurance, the full present value of his policy, thus distributing its benefits to all with exact impartiality, without favoritism, and without the intervention of directors, trustees, or committees.

5. After two years insurance, it gives its policy-holders, if dissatisfied or unable to continue payment, the option of two different modes of withdrawal on equitable terms, thus most effectually providing against lapses or forfeitures.

6. It makes no false or delusive pretensions, and its agents are strictly instructed to refrain from such. While liberal and accommodating to the utmost degree consistent with safety, the Company makes no miraculous or impossible claims.

7. In its provisions for **FEMALE RISKS**, such arrangements have been made as especially to recommend it to the preference of ladies.

Further information may be obtained from any Agent of the Company as to these and other interesting features in its system.

The undersigned, in accepting the Agency, confidently hopes that his friends and fellow-citizens of Georgia will give the Carolina Company the same favorable consideration, and feel the same interest in its prosperity that have been of late so freely accorded to it in adjacent States, wherever its operations have been extended.

WILLIAM M. BROWNE,

General Agent for Western District of Georgia, Office Macon, Ga.

Vol. 1.

LANIER HOUSE,

MACON, GA.,

N. BINSWANGER,

PROPRIETOR.

Free Omnibus to and from Passenger Depot.

Oct—11

J. H. OTTO,

**Watchmaker, Jeweler,
AND OPTICIAN,**

FOURTH ST., (Spotswood Hotel,)

Dealer in

WATCHES, CLOCKS,

JEWELRY, SPECTACLES

AND

SILVERWARE.

REPAIRING

On **WATCHES, CLOCKS** and **JEWELRY** done
carefully and on short notice,

And Warranted.

Oct—1

A. PATTERSON,

J. A. CASEY.

**Georgia Bar and Billiard
SALOON.**



A. PATTERSON & CO.

FINE WINES,

PURE LIQUORS,

GENUINE HAVANA SEGARS, etc.

BILLIARD MATERIALS ALWAYS ON HAND.

61 Mulberry and 81 Cherry Sts.,

Oct—1

MACON, GEORGIA.

Southwestern Depot

OF THE

RAMSDELL NORWAY OATS.

WE are now ready to fill orders for this wonderful Oat. The success that has attended those that tried them last season, establishes their claim as far superior to any other Oat. The trial made this season convinces all that the FALL is the most suitable time to sow them.

Now do not delay, but send your orders at once.

Price, per bushel, \$3 00; Ten bushels, 25 00; twenty bushels, 45 00.

Look out for bogus NORWAY OATS; thousands of bushels are being offered.

We have the GERMAN BLACK OAT, a new Oat just imported. Has been successfully tried here for two seasons; is a Fall Oat; good yielder; ripens early.

Also, other varieties: the SURPRISE, PRINCE EDWARD, NEW BRUNSWICK.

Price of the above Oats, Two Dollars per bushel.

RECOMMENDATIONS:

Notwithstanding the severe drought here, I think all the Oats I have seen will double, if not triple, the common Oats. I am of the opinion that the Fall is the proper time to sow them. DAN'L McMILLAN, LaGrange, Ga.

Well satisfied. Will sow this Fall, also in Spring.

J. C. WILLIAMSON, Washington, Ga.

I fancy them for their stout straw and heavy full heads. I compared them with the common Oat by rubbing out two heads—common had thirty-two, Norway one hundred and twenty-two kernels. C. W. GRIFFIN, Carrollton, Ga.

I have tested the Norways, and find they stand the winter equal with wheat. They are valuable as a fodder. I expect to sow what I have.

N. M. BEVERLY, near Dawson, Ga.

They are superior to the White or Black Oats.

A. C. COOK, Covington, Ga.

Entered according to Act of Congress, by D. W. Ramsdell & Co., in the Clerk's Office for the Southern District of New York.

Fifty-eight and one fourth bushels from one. We can only say the Norways are the best Oats we ever saw. Everybody in this county is well pleased with them. POOL & ARNOLD, Trenton, Ala.

They are far superior, both in quality and productiveness, to any other. Had I drilled all, as I did a few, my yield would have been three times as many. CLABURN BUCKNER, Cowle's Station, Ala.

Will do much better sown in the Fall.

Are way ahead of the White or Black Oats.

Will double the Black or White Oats, and grow taller on poor land. Mine grew five and one-half feet high. JOHN P. SEWELL, Meriwether county, Ga.

I sowed a large yellow Oat on same class land, manured the same; Norways much the best. I appreciate the fodder, and think it equal to the best hay. I shall sow all of mine this Fall.

J. P. HUNT, Georgia.

I believe them to be the Oat for this country. Sowed one bushel, harvested thirty bushels, on thin land; had season been favorable would have done much better. No rust on them.

A. B. QUINN & Co., Summit, Miss.

Buy only from persons of known responsibility, and see that they can show our trade mark, which stands at the head of this article.

SEED WHEAT! SEED WHEAT!

NEW AND IMPROVED VARIETIES.

"DIEHL," Extra White. Yields 30 to 40 bushels per acre.....	per bushel, \$5 00
"TAPPAHANNOCK," Superior White. Yields 20 to 35 bushels per acre.....	" " 4 00
"BOUGHTON," Superior White. Yields 20 to 35 bushels per acre.....	" " 3 00
"WALKER," Virginia Red. Yields 25 to 35 bushels per acre.....	" " 3 00
"LANCASTER," Pennsylvania Red. Bearded. Best for thin land.....	" " 2 50

Our stock of SEED WHEAT is selected with the greatest care, and all warranted true to name.

GRASS SEEDS, fresh and pure, all varieties: Clover, Timothy, Orchard, Kentucky Blue, Herds Grass or Red Top.

We are also Agents for Dismuke's Seed Gatherer, Hill's Lawn Mower.

Send for our Illustrated Catalogue. All inquiries cheerfully answered.

HOUGH & CHURCH, Knoxville, Tennessee.

Depot and Office, No. 3 McGhee Block, Gay street.

Oct—1

STANDARD PERIODICALS**For 1870.**

REPUBLISHED by the Leonard Scott Publishing Committee, New York.
Indispensable to all desirous of being well informed on the great subjects of the day.

1. THE EDINBURGH REVIEW.

This is the oldest of the series. In its main features it still follows in the path marked out by Brougham, Jeffrey, Sydney Smith, and Lord Holland, its original founders and first contributors.

2. THE LONDON QUARTERLY REVIEW,

which commences its 128th volume with the January number, was set on foot as a rival to the EDINBURGH. It resolutely maintains its opposition in politics, and shows equal vigor in its literary department.

3. THE WESTMINSTER REVIEW

has just closed its 92d volume. In point of literary ability, this Review is fast rising to a level with its competitors. It is the advocate of political and religious liberalism.

4. THE NORTH BRITISH REVIEW,

now in its 51st volume, occupies a very high position in periodical literature. Passing beyond the narrow formalism of schools and parties, it appeals to a wider range of sympathies and a higher integrity of conviction.

5. BLACKWOOD'S EDINBURGH MAGAZINE

was commenced 52 years ago. Equalling the Quarterlies in its literary and scientific departments, it has won a wide reputation for the narratives and sketches which enliven its pages.

TERMS FOR 1870.

For any one of the Reviews, \$4 per annum; for any two of the Reviews \$7; for any three of the Reviews, \$10; for all four of the Reviews, \$13; for Blackwood's Magazine, \$4; for Blackwood and one Review, \$7; for Blackwood and any two of the Reviews, \$10; for Blackwood and three of the Reviews, \$13; for Blackwood and the four Reviews, \$15 per annum.

Single Numbers of a Review, \$1; Single Numbers of Blackwood, 35 cents.

The Reviews are published quarterly; Blackwood's Magazine is monthly. Volumes commence in January.

CLUBS.—A discount of *twenty per cent* will be allowed to clubs of four or more persons, when the periodicals are sent to *one address*.

POSTAGE.—The Postage on current subscriptions, to any part of the United States, is *two cents* a number, to be prepaid at the office of delivery. For back numbers the postage is double.

PREMIUMS TO NEW SUBSCRIBERS.—New subscribers to any two of the above periodicals for 1870 will be entitled to receive one of the four Reviews for 1869. New subscribers to all the five may receive Blackwood or two of the Reviews for 1869.

BACK NUMBERS.—Subscribers may, by applying early, obtain back sets of the Reviews from January, 1865, to December, 1869, and of Blackwood's Magazine from January, 1866, to December, 1869, at half the current subscription price.

Neither premiums to subscribers, nor discount to clubs, nor reduced prices for back numbers, can be allowed, unless the money is remitted direct to the Publishers. No premiums can be given to clubs.

The January numbers will be printed from new type, and arrangements have been made, which, it is hoped, will secure regular and early publication.

The Leonard Scott Publishing Co.,

Oct—1f

140 Fulton St., New York.

EVERGREENS BY MAIL.

Sent in Perfect Safety to Any Part of the World.

EVERY FARMER and every man owning a house and lot in America should have a few dollars worth of our Tree Seedlings by mail.

Two to four inch plants sent for \$3 00 per 1000, postpaid, to any part of the United States.

All varieties of Evergreens and Forest Trees, of all sizes, cheaper than anywhere else in America.

Full directions for planting and culture sent with every mail order.

Send stamp for Price Lists and Testimonials from nearly every State in the Union. Large Descriptive Catalogue sent for 10 cents.

Remember, we are the largest, oldest and most reliable dealers in Native Evergreens and Forest Trees in America.

August, September and October are favorable months for getting Evergreens by mail, and the proper season for planting. Address

PINNEY & LAWRENCE,

Oct—2m

Sturgeon Bay, Wis.

A DEMOCRATIC AND FAMILY NEWSPAPER.**THE SAVANNAH MORNING NEWS.**

Now is the time to Subscribe for it.

YOU have your choice, and can take either the Daily, Tri-Weekly, or Weekly edition.

THE MORNING NEWS

is, in all respects, a Democratic Journal, faithful to Democratic principles, and earnest in advocacy of Democratic measures. It believes that the success of its party is necessary to the salvation of the country. Its reputation as a news Journal will be maintained as heretofore. In Domestic, Foreign and Commercial Intelligence, Literature, etc., it is not surpassed by any paper in the country. Its whole character is comprehensively stated in saying that it is a great Democratic and Family Newspaper, devoted to the interests of the people of the South. To every business man, its Market Intelligence alone is worth many times its subscription.

Col. W. T. THOMPSON, with able assistants, has control of its Editorial and News columns; while its corps of Reporters are reliable in every respect.

Terms—On year, \$10; Six months, \$5; Three months, \$2 50.

THE TRI-WEEKLY NEWS

is published every Monday, Wednesday and Saturday, and is made from the daily editions.

Terms—One year, \$6; Six months, \$3; Three months, \$1 50.

THE WEEKLY NEWS

is issued every Friday; is designed for country readers, and contains a careful summary of the news of the week, with the principal editorials, the current news, the latest dispatches, and full market reports.

Terms—\$2 a year; \$1 for six months.

No attention paid to orders, unless accompanied by the money.

Postmasters everywhere are authorized to act as Agents.

Money can be sent by Post Office order or Express, at our risk. Address

J. H. ESTILL,

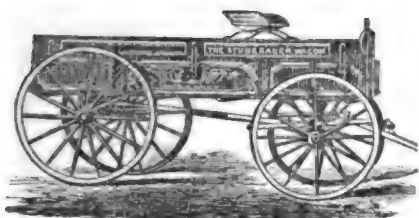
111 Bay street, Savannah.

Oct—1f

W. W. COLLINS,

Dealer in

The Celebrated

STUDEBAKER WAGONS,

FIRST PREMIUM AT

LOUISIANA STATE FAIR,

FIRST PREMIUM AT

THE TEXAS STATE FAIR,

For

The Best Farm and Road Wagon.**Read the Warrantee.**

I warrant the Thimble Skein Wagons of the above manufacture, as follows:

That the Lumber used in their construction is of the best quality of Indiana's celebrated Timber, thoroughly seasoned and put together by honest and experienced workmen, and that the strength of the same is sufficient for all work with fair usage; and any breakage within one year, resulting from defect in either material or workmanship, we agree to pay all reasonable charges, or make good all necessary repairs, without cost to the purchaser, at place of sale.

Send for Circulars and Price List.

W. W. COLLINS,

Second Street, DeLoache's Block,

Oct—3

MACON, GA.

THE RURAL CAROLINIAN GREAT SOUTHERN AGRICULTURAL

MONTHLY MAGAZINE,*Two Dollars per Annum.***64 PAGES READING MATTER.****30 PAGES ADVERTISEMENTS.****WALKER, EVANS & COGSWELL,****D. WYATT AIKEN,****CHARLESTON, S. C.**

Oct—11

Seeds for the South.

AS I warrant all my Seeds to be fresh and genuine, refilling orders gratis if they do not prove so, no man runs any risk who purchases his seeds of me. I grow over a hundred varieties of vegetable seeds on my three Seed Farms. Catalogues gratis to all.

JAMES J. H. GREGORY,
Marblehead, Mass.

Oct—2m

Pomona Nursery.

50,000 PEACH TREES, best varieties; Colossal Asparagus, Kentucky Strawberries, Imperial Raspberries. Send 10 cents for Descriptive Catalogue of 56 pages. It tells what and how to plant.

Oct—1

W. M. PARRY,
Cinnaminson, N. J.**BICKFORD & HUFFMAN'S****Continuous Distributor****GRAIN DRILL,****WITH GUANO AND SEED ATTACHMENT.****THE FARMER'S FAVORITE!****THE DESIDERATUM OF SEEDERS!**

Perfect in Mechanical Construction!—Perfect in its Performance of Work!

W. L. BUCKINGHAM,**GENERAL AGENT,****59½ South Charles Street, BALTIMORE, MD.****PRICES IN BALTIMORE, ON BOAT OR CARS.**

8 Tube Grain Drill.....	\$ 85
With Guano Attachment.....	125
9 Tube Grain Drill.....	90
With Guano Attachment.....	190
Grass Seed Sower.....	10

Apl—9m

BIRD FOOD

PREPARED BY

E. H. HICKS.

I AM NOW PREPARED to give my personal attention to the preparation and sale of my

PREPARED BIRD FOOD!

which has been thoroughly tested and recommended by some of the FIRST CITIZENS OF MACON and other places, whose certificates I have in any quantity.

AS FOOD FOR MOCKING BIRDS

it is not to be equalled in quality and healthfulness, and in a point of economy is a decided saving. Those who have used it will now use no other.

Full directions for Feeding and Treatment of Birds accompany each can of the Feed.

All orders for any quantity desired, whether in the city or at a distance, promptly and satisfactorily filled by

E. H. HICKS,
MACON, GEORGIA.

Oct—1

“WOODEN SHANTY”

BAR AND RESTAURANT.

GEORGE D. LAWRENCE,

HAVING recently refitted his old “Shanty,” on FOURTH STREET, BETWEEN SPOTSWOOD and BROWN’S HOTEL, is now prepared to serve his old customers and the public generally with the choicest brands of

WINES,
BRANDIES,

WHISKIES,
RUSSELL & PETERS’ LAGER BEER,

and all liquids usually found in a first-class Bar. Also, SEGARS and TOBACCO, of the best quality, always on hand.

In addition to his Bar, he has opened a first-class

RESTAURANT,

where meals will be furnished at all hours. FISH, GAME, OYSTERS, HAM AND EGGS, and in fact everything that can be desired, is to be found served up in the best style, and at prices to suit every body.

Having procured polite and attentive clerks and *attaches*, he guarantees entire satisfaction to all who may give him a call.

Oct—1

FERTILIZERS

OF THE

SULPHURIC ACID AND SUPERPHOSPHATE

COMPANY,

CHARLESTON, SOUTH CAROLINA,

Manufactured under the direction of DR. N. A. PRATT, Chemist.

DISSOLVED BONE.

Valuable as the Basis for Compost and Manipulated Fertilizers.

Any Grade made to Order.

NATIVE BONE PHOSPHATE.

This is simply Pure South Carolina Phosphates reduced to a very fine Flour, and as a cheap, but very Permanent and Effective, Fertilizer, is recommended as equal in all respects to Ground Bone.

ETIWAN NO. I,

Guaranteed by the Company to contain

Soluble Phosphoric Acid, (Hydrated) 15.07 per cent.

Equal to Soluble Phosphate of Lime, 17.99 per cent.

Equal to Dissolved Bone Phosphate of Lime, 23.83 per cent.

Which is from three to five times more than is contained in best average fertilizers.

ETIWAN NO. II,

Guaranteed by the Company to contain

Soluble Phosphoric Acid, (Hydrated) 12.56 per cent.

Equal to Soluble Phosphate of Lime, 15 .00 per cent.

Equal to Dissolved Bone Phosphate of Lime, 19 .87 per cent.

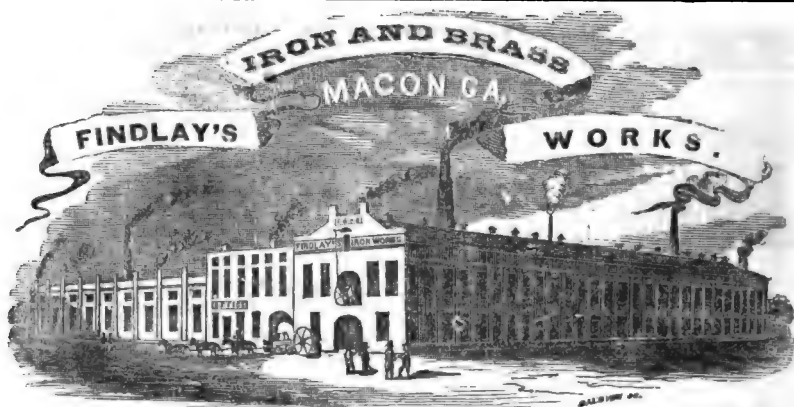
Also Ammonia, 1½ to 3 per cent.

Address

W. C. BEE & CO., Agents,
Charleston, South Carolina.

Dec—6ms.

R. FINDLAY'S SONS,



MACON, GEORGIA.

**STEAM ENGINES, BOILERS, SAW MILLS,
AND EVERY DESCRIPTION OF
MACHINERY, CASTINGS, ETC.
SEND FOR DESCRIPTIVE CIRCULAR.**

A Letter from Hon. B. H. HILL, of Georgia.

ALBANY, GEORGIA, MARCH 25TH, 1870.

Messrs. R. FINDLAY'S SONS, IRON AND BRASS WORKS, MACON, GA.

DEAR SIRS:—The STEAM ENGINE, CIRCULAR SAW MILL and GRIST MILL ordered by me from you some weeks ago, are now in full operation. The job is not only up to your contract, but is considerably better than your contract. Several good judges have pronounced the ENGINE and MILLS, and the ENTIRE JOB, AS THE BEST THEY EVER SAW. For your promptness, fidelity, and efficiency in the matter, please accept my thanks, for it is certainly a pleasure these days for a man to get all, and more than all, he bargains for.

Any orders I may have to make in the future, in your line, will certainly be sent you.

July 11

Yours Very Truly,

BENJ. H. HILL.

THE CRISWOLD GIN,

MANUFACTURED BY

O. W. MASSEY, Macon, Georgia.

HAVING MADE VALUABLE IMPROVEMENTS TO THE CRISWOLD GIN WITHIN THE last year, I again offer them to planters, as the best and most reliable Gin manufactured either North or South.

I am prepared to furnish Gins at short notice with any number of saws, from forty (40) to one hundred (100.) I also furnish gin gear of eight, nine or ten feet, suitable for my Gins.

SPECIAL ATTENTION

Given to repairs of old Gins. No charge for drayage on gins sent by railroad.

With an experience of over thirty years as a manufacturer of Gins, and having a shop well supplied with machinery and employing the best of workmen, I am enabled to warrant all my work, and to offer to planters as good inducements as to quality and price, as any establishment North or South.

May-11

O. W. MASSEY, Macon, Ga.

BLOOMINGTON NURSERY,

600 Acres. 19th Year. 10 Green-houses.

FRUIT and Ornamental Trees, Nursery Stock, Evergreens, Rootgrafts, Hedge Plants, Tulips, Hyacinths, Crocus, Lillies, Colored Fruits, and Flower Plates. All at Wholesale and Retail. Send 10 cents for Catalogues.

F. K. PHOENIX, Bloomington, Ill.

Aug.—4t.

Macartney Rose, etc.

CUTTINGS AND ROOTED PLANTS for sale. Rose Cuttings, \$6 per thousand; Rooted Plants, \$10. Also, PYRACANTHUS CUTTINGS, at \$10 per 1000. All boxed and delivered at the Railroad Depot or Express Office. Address, postpaid,

Mrs. WM. N. WHITE,

Sept—3t

Athens, Ga.

WM. KNABE & CO.,

MANUFACTURERS OF GRAND, SQUARE AND UPRIGHT PIANO FORTES.

WAREHOUSES, NO. 350 WEST BALTIMORE ST. NEAR EUTAW, BALTIMORE



These instruments have been before the Public for nearly Thirty Years, and upon their excellence alone attained an unpurchased pre-eminence, which pronounces them unequalled.

Their TONE combines great power, sweetness and fine single quality, as well as great purity of intonation, and evenness throughout the entire scale. Their TOUCH is pliant and elastic, and entirely free from the stiffness found in so many Pianos.

All our Square Pianos have our New Improved Overstrung scale and the AGRAPPE TREBLE.

We would call special attention to our late improvements in GRAND PIANOS AND SQUARE GRANDS, Patented August 14, 1866, which bring the Piano nearer perfection than has yet been attained.

EVERY PIANO FULLY WARRANTED FOR FIVE YEARS. Sole Wholesale Agency for CARHART & NEEDHAM'S Celebrated Parlor Organs and Church Harmoniums.

WM. KNABE & CO.,

NO. 350 WEST BALTIMORE STREET, NEAR EUTAW, BALTIMORE.

BURKE, GUILFORD & CO., General Agents for Georgia, Macon, Ga.

PURE SHORT-HORN**DURHAM CATTLE;****Improved Kentucky" Sheep;****WOBURN, WHITE BEDFORD,****Irish, and Yorkshire Hogs, blended,**

AND

CASHMERE

OR

ANGORA GOATS;

BRED AND FOR SALE BY

ROBERT W. SCOTT,

Near Frankfort, Kentucky,

FOR OVER THIRTY-FIVE YEARS

On the same farm, and in the same business.

Nov—tf.

WM. J. ANDERSON & CO.,

Fort Valley, Georgia,

DEALERS IN

STAPLE AND FANCY**DRY GOODS,****HARDWARE, SHOES, ETC.,**

ALSO,

Soluble Pacific Guano,
 Etiwan South Carolina Phosphate,
 Wilcox, Gibbs' & Co's Manipulated Guano,
 Phoenix Guano,
 Baker's P. Guano,
 Coe's Phosphate,
 Turner's Excelsior,

Baugh's Raw Bone,

Dissolved Bones,

Land Plaster,

Patapsco Guano,

Mapes' Phosphate,

Baugh's Blood Manure,

And all other *reliable* fertilizers offered in market.

November 15, 1889.

1-tf

D. R. ADAMS,
 Eatonton, Ga.,
 A. A. ADAMS, Americus, Ga.

H. K. WASHBURN,
 Savannah, Ga.
 A. A. ADAMS, Americus, Ga.

ADAMS, WASHBURN & CO.,

GENERAL

Commission Merchants,

SAVANNAH, GEORGIA.

December 15, 1889.

2-tf

T. E. C. BRINLY.

A. D. MILES.

J. EDWARD HARDY

BRINLY, MILES & HARDY,

Sole Manufacturers of BRINLY'S

CELEBRATED PLOWS, CULTIVATORS,**Cotton Sweeps, Cotton Scrapers, &c.**

Send for Price List and Circular.

**BRINLY'S UNIVERSAL.**

The best and cheapest Steel Plow made. Suited for every kind of soil.

Office and Factory: 130, 132 & 134 East Main Street,

LOUISVILLE, KY.

Nov15-tf

GALT HOUSE,

LOUISVILLE, KENTUCKY.

The subscriber has purchased the entire interest of Capt. Silas F. Miller, in the GALT HOUSE, and pledges himself to his friends and the public, that he will spare no pains to render it worthy of its time-honored name.

In its arrangements and appointments he is safe in saying that the GALT HOUSE is not surpassed by any Hotel in the world.

JILSON P. JOHNSON,
 Nov. 15, 1889. 1-ly. **MANAGER.**

SLADE'S IMPROVED WATER WHEEL.

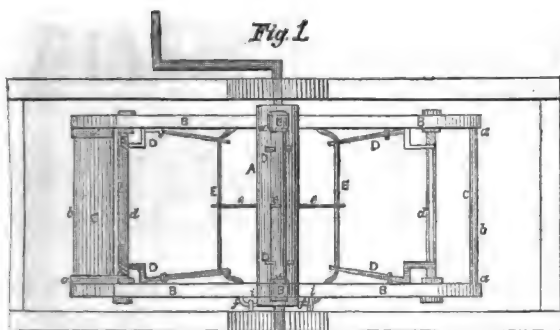


Fig. 1

The inventor claims for this wheel the following advantages over ordinary water wheels, which he thinks will commend it to the public:

1. It entirely overcomes the lift water in propelling steam vessels of all kinds.
2. It requires but little damming to drive all qualities of Machinery by water, therefore doing away with damming and ponding water or streams, and the ills generally attendant thereon.
3. Can be worked on streams very near each other, so that one wheel can assist another, if more power is wanted without one interfering with another.
4. Every man having a water power can use it without ponding on his neighbor.

The advantages of this wheel will be made apparent to any one who desires further information by addressing the inventor.

Individual County, State and Territorial rights for sale.

Any person purchasing a right and following the directions strictly, if the wheel fails to perform, the purchase money will be returned.

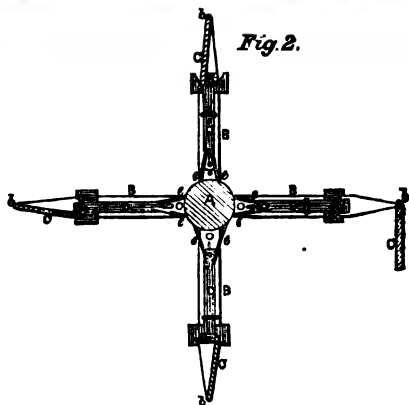


Fig. 2.

May-1f

WM. SLADE, Sr., Gum Creek, Ga.

HYDRAULIC AND MECHANICAL

ENGINEERING AND GENERAL CONTRACTING.

THE UNDERSIGNED have associated themselves, under the firm of McCULLOCH & HUDGIN, with the intention of conducting a General Engineering and Contracting business. We propose to make a specialty of

HYDRAULIC ENGINEERING AND CONSTRUCTING

Including Surveys, Plans and Estimates for

DAMS, WATER-WHEELS, MILLS AND FACTORIES,

Including details of Machinery and proposals for its erection. As we are Agents for several extensive Manufacturing establishments, we are prepared to contract for Machinery of nearly every description, on short notice and liberal terms.

Satisfactory references furnished, if desired.

**JAMES McCULLOCH,
W. HUDGIN, M. D.**

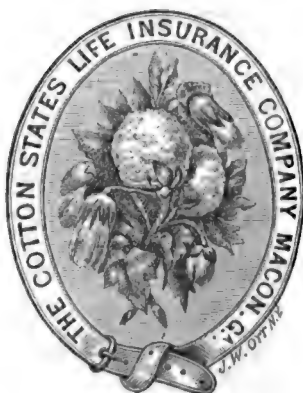
Athens, Ga., Dec., 1869—1y.

COTTON STATES LIFE INSURANCE COMPANY.

PRINCIPAL OFFICE, MACON, GA.

Authorized Capital,\$2,000,000
 Guaranteed Capital,\$ 500,000
 Deposited with State Comptroller
 for Security of Policy Holders...\$ 100,000

WM. B. JOHNSTON,	PRESIDENT.
WM. S. HOLT,	VICE PRESIDENT.
GEORGE S. OBEAR,	SECRETARY.
JOHN W. BURKE,	GENERAL AGENT.
C. F. McCAY,	ACTUARY.
J. MERCER GREEN,	MEDICAL EXAMINER.
W. J. MCGILL,	SUPERINTENDENT OF AGENCIES.



THIS Company issues all the various kinds of policies, and they are all NON-FORFEITABLE after two full payments. They give a loan of fifty per cent. on all premiums amounting to over Fifty Dollars. It is a *Southern Company*, and every *Southern* man is interested in keeping the large accumulations of Life Companies at home. In Fire Insurance the premiums are mostly returned to meet losses; but in Life Insurance they are accumulated to meet the deaths at old age, and only returned after many years.

The money retained here will bring better interest, and thus swell the profit of a mutual company, and benefit the insured in many other ways.

EVERY SOUTHERN MAN

Will be sure to assent to this, and favor a Southern Company if it is safe. We offer him precisely the same security as the Northern Mutual Companies, the accumulated premiums of the insured.

sured, paid by the young, to meet the amounts insured when they grow old and die, and in addition thereto, a capital commencing with

\$500,000!

Surely this makes it safe, and if so, let every man insure at home.

THEN PREFER THE COTTON STATES LIFE INSURANCE COMPANY:

1. Because it is a mutual company.
2. Because it is a Southern company.
3. Because it has a large guaranteed capital.
4. Because it has liberal policies.
5. Because its policies are all non-forfeiting.
6. Because it does not restrict traveling.
7. Because it has the best plans of insurance.
8. Because it will always have \$100,000 deposited with the Comptroller General for the special security of policy holders.

For further particulars, address

GEO. S. OBEAR, Secretary, or
 JOHN W. BURKE, General Agent.

GOOD and RELIABLE AGENTS wanted in every State, County, City and Town in the Union. **LIBERAL TERMS** will be made with persons who will act as Agents for this Company. For particulars address, with references,
 JOHN W. BURKE, General Agent.
 Nov-15-tf

ENCOURAGE HOME INDUSTRY!

The Best Manure for Wheat and Turnips.

THE FERTILIZERS specially prepared for COTTON, CORN, WHEAT, OATS, TURNIPS, etc.,
by the

MCLETHORPE FERTILIZER MANUFACTURING COMPANY,

(MESSRS. BRIGHTWELL, BAILEY & CO.,)

MAXEY'S GEORGIA,

are confidently offered to Southern Agriculturists as of GENUINE SOUTHERN MANUFACTURE,
and of GREATER PURITY and REAL VALUE than any other Artificial Manure now for sale.

These Fertilizers are of three grades, carefully mixed, finely ground, and well packed in sacks containing about 200 pounds, at the following prices—per ton—at the Works :

NO. 1, \$50

NO. 2, \$60

NO. 3, \$75

Address orders to

Brightwell, Bailey & Co.,

MAXEY'S, GEORGIA.

Aug.—3m

WILDER & ELLIS,

STEAM SASH FACTORY,

THIRD STREET,

Next to Artope's Marble Yard,

MACON, - - - - - GEORGIA,

MANUFACTURERS OF

**Doors, Sash, Blinds, Mouldings,
Brackets, etc.,**

And all kinds of Building Materials.

ALL WORK WARRANTED.

Special attention given to the building of Cottage
Houses. Rough and dressed LUMBER al-
ways on hand at the Lumber Yard,
Poplar Street, between Fifth and Sixth Streets.
June 1st

MILLEDGEVILLE HOTEL,
MILLEDGEVILLE, GA.

S. & R. A. McCOMB, - - - - PROPRIETORS.

THE PATRONAGE OF THE TRAVELING
public is respectfully solicited. They will find
first class accommodation, good attendance, and
the best of fare.

Reliable porters attend the trains regularly.
June 7th

T R E E S .

FRUIT AND ORNAMENTAL, FOR 1870.

(Established 1840.)

THE LARGEST AND MOST COMPLETE
stock in the United States
Orders for large or small quantities promptly and
carefully filled. Packing performed in the most
skillful and thorough manner.

Small parcels forwarded by mail when desired.
Nurserymen and Dealers supplied on liberal
terms.

Descriptive and Illustrated priced Catalogue sent
prepaid on receipt of stamps, as follows :

No. 1.—Fruits, 10c. ; No. 2.—Ornamental Trees,
10c. ; No. 3.—Green-house, 5c. ; No. 4.—Whole-
sale, Free. Address

ELLWANGER & BARRY,
Mount Hope Nursery,
Rochester, N. Y.

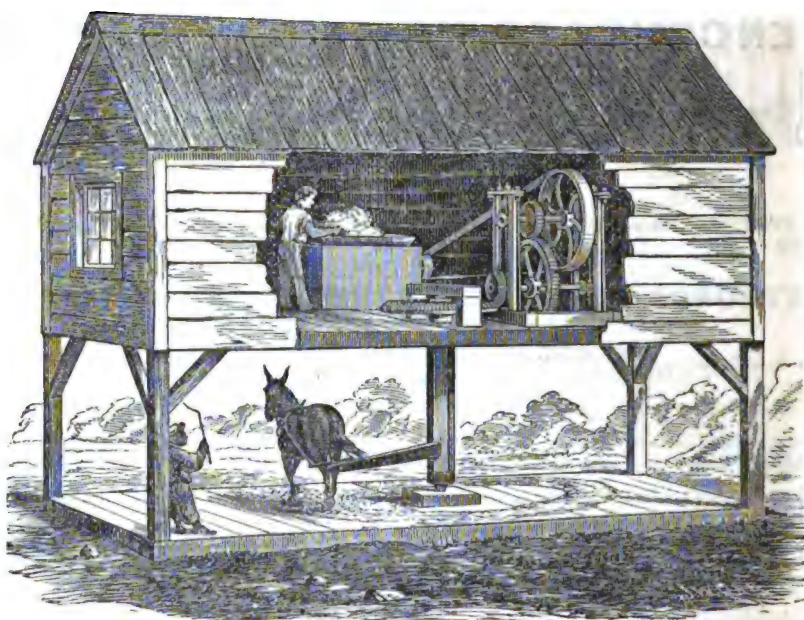
May-6m

**White-Faced Black Spanish,
and White-Faced Spanish
Dominique Fowls.**

ORDERS FOR THE ABOVE FOWLS TO BE
shipped in Sept. and Oct., received. Price
\$6 per pair.

Address, with postage stamp,
June 3^m A. H. SNEED, Forsyth, Ga.

AWARDED FIRST AND HIGHEST (AND ONLY) PREMIUM



AT GEORGIA STATE FAIR.

BOTTOMS' CELEBRATED HORSE POWER AND GIN GEAR,

MANUFACTURED FOR GEORGIA, SOUTH CAROLINA, ETC., ONLY BY

**R. Findlay's Sons, Findlay Iron Works,
MACON, GEORGIA.**

SEND FOR DESCRIPTIVE CIRCULAR.

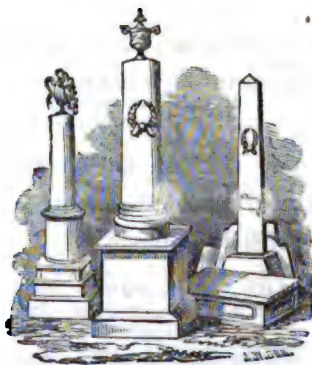
July 14

MARBLE AND GRANITE WORKS.

J. B. ARTOPE & SON,

MANUFACTURERS OF

MONUMENTS,
BOX TOMBS,
HEAD STONES,
VASES,
IRON RAILINGS, ETC.



CORNER THIRD AND PLUM STREETS,

MACON, - - - - - GEORGIA
Apl-ly

TO COTTON PLANTERS!

The FERTILIZER specially prepared for Cotton by the

Stonewall Fertilizing Company,
Of Richmond, Va.,

Is fearlessly offered to the planting community of the South as a

Genuine Southern Material,

And of

Very Much Higher Standard

As to purity and intrinsic value than any other article of the kind now upon the market.

It is prepared from the formula and under the directions of Dr. J. W. MALLET, Professor of Agricultural and Industrial Chemistry in the University of Virginia, who, while a Professor in the University of Alabama, devoted special attention for several years to the chemistry of Cotton culture. It is manufactured from GENUINE MATERIALS OF BEST QUALITY—

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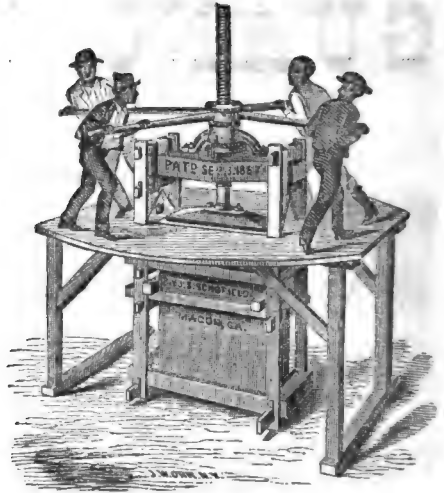
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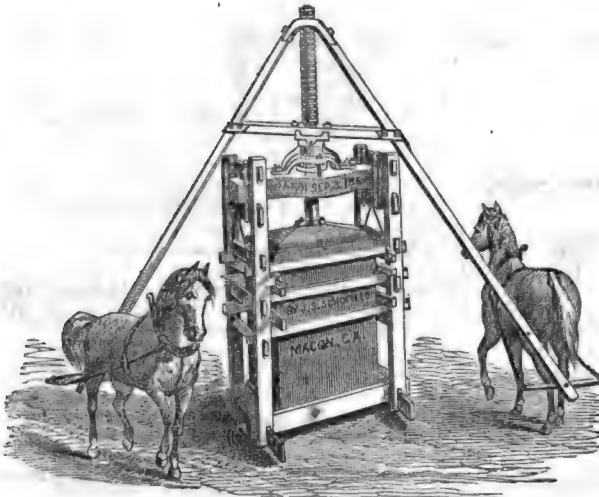
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SPECIAL MANURE FOR WHEAT AND CORN,

which I am satisfied by *actual experiment* made by me, will be found to be particularly adapted to the

SOIL AND CLIMATE OF THE SOUTHERN STATES,

and would advise my friends desirous of testing its merits, to send in immediate orders.

Circulars containing Certificates, and general directions for its application, can be obtained by addressing me at Sparta, Ga., or R. W. L. RASIN & Co., General Agents, 32 South street, Baltimore who will receive and execute orders.

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LIVER REGULATOR

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MEDICINE.

A SURE AND EFFECTUAL CURE FOR ALL DISEASES.

DYSPEPSIA, COSTIVENESS, LIVER COMPLAINT, FEVER AND AGUE, BILIOUS FEVERS, NERVOUS AND SICK HEADACHE, DIARRHŒA AND DYSENTERY OF A BILIOUS TYPE, IMPURITY OF THE BLOOD, DROPSY, BOILS, MELANCHOLY, HEART BURN, JAUNDICE, NERVOUSNESS, OBSTRUCTED MENSTRUATION, ALSO, A PREVENTIVE AND CURE FOR PILES.

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For fever and ague it strikes at the seat of the disease by regulating the liver in its action, which carries off the bile, thereby removing the *cause* of the chills and fever.

Symptoms of a diseased

A bitter or bad taste in pain in the side, sometimes shoulders, and is mistaken is affected with sourness, ness; at times a burning

stomach is felt; bowels in general costive, sometimes alternating with lax; the head is troubled with dizziness, pain, or dull, heavy sensation, with considerable loss of memory, or a painful sensation of having left undone something that ought to be done; the skin and eyes at times assume a thick yellowish appearance, the feelings are depressed with melancholy or the blues; other times vindictive and irritable from trifling causes, or anxious and nervous, easily startled; a feeling of drowsiness and indolence exists, and although satisfied exercise would be of benefit, the patient can seldom summon up fortitude enough to take it, in fact is inclined to distrust every remedy; the food does not digest, a fulness about the abdomen experienced, and a disposition to often loosen the clothing; the feet are cold or burning, sleep restless, dreams commonly frightful; a prickly sensation of the skin is often felt; the face is sometimes flushed and a dry cough is often an attendant. Of course not all, but sometimes several of the above symptoms attend the disease, and cases have occurred when but few of them existed; yet, upon examination of the body after death, the liver has been found extensively diseased.

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VOL. IV. No. 1.

THE
SOUTHERN

FARM AND HOME



NOVEMBER, 1872.

W. M. BROWNE, EDITOR.

PUBLISHED BY

BOYLE & CHAPMAN,

MEMPHIS,

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Red Clover, - - - \$8.00 per bush.

Sow 10 lbs. to the acre.

Orchard Grass, - \$3.00 per bush.

Sow one bushel to the acre.

Herds Grass, - - \$1.75 per bush.

Sow one bushel to the acre.

Blue Grass, - - - \$2.00 per bush.

Sow one bushel to the acre.

Timothy Seed, - \$5.00 per bush.

Sow one bushel to four acres.

White Clover, }
Alsike Clover, }
Lucern Clover, }

- - 75 cts. per lb.

Sow six lbs. to the acre.

Seed Rye, - - - \$1.15 per bush.

Seed Barley, - - - \$1.25 per bush.

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*In all cases Sacks will be charged extra to
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No. 1, 7-in. cut (steel point and land side), \$ 8 50

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EXTRA POINTS, &c.

No. 1, A, B or C steel point.....\$1 50

No. 1, A, B or C cast point..... 35

No. 2, B steel point..... 2 00

No. 2, B cast point..... 50

No. 3, B steel point..... 2 50

No. 3, B cast point..... 50

STANDARDS.

No. 1, cast standard.....\$2 00

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No. 3, cast standard..... 2 50

No. 4, steel cotton sweep..... 3 50

No. 6, cotton scraper..... 2 50


No. 8, steel shovel mold..... 2 50

No. 10, cast shovel upright..... 1 25

No. 12, wrought bull-tongue..... 1 00

No. 14, steel half shovel..... 2 00

No. 15, buzzard wing, Dickson's steel sweep 3 50

 Improvements have been made from time to time upon the "Brinly Universal Plow." These changes are indicated by the letters A, B, C, etc.; therefore, persons ordering extra standards and points must be careful to give the letter as well as the number, also the date of the patent on the casting to be replaced, and state whether your plow is straight or crooked beam, and give the number of the kind of upright.

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Nov. '72.-6m.

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A. C. LANE, Horn Lake Depot, Miss. Cured him of Paralysis.
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M. V. BOSAN, Olive Branch, Miss. Cured of neuralgia. Had suffered three years.
B. BRICK, Harrell's Crossing, Miss. Cured of neuralgia and rheumatism.
GEORGE M. SANDIFER, Madison Station, Ala. Cured of rheumatism of twenty years' standing.
DR. ALFRED MOOREMAN, Sacramento, Ky., writes: "Your Liniment gives universal satisfaction."
DR. J. W. TARRY, Dukedom, Tenn., writes: "Your Magic Arnica Liniment gives great satisfaction."
Hundreds of others have published their testimony to its great merits.

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Dr. Jackson's Female Vigorator: A REGULATOR.

UNSURPASSED FOR THE CURE OF DISEASES PECULIARLY INCIDENT TO WOMEN.

The enlarged experience of Dr. Jackson, who made the Diseases of Women a specialty, made him eminently successful, and to that experience and success we are indebted for the happy combination known as his

FEMALE VIGORATOR.

This Preparation is intended specially for the Cure of Female Diseases, such as
**CHLOROSIS, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION,
SUPPRESSED MENSTRUATION, LEUCORRHEA, UTERINE ULCERATION,**
And all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really believed that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and then who are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and similar affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a faithful trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. See that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

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THE VERY BEST LUNG MEDICINE EXTANT.

HUNGARIAN BALSAM OF LIFE.

This valuable compound is no secret preparation. Its ingredients are well known, and, what is better, have been well and successfully tested. Read the list:

**WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR,
HOARHOUND, LUNGWORT, SQUILLS, SENEKA, MATICO, LOBELIA,
ENGLISH WOOD NAPHTHA.**

The most scrupulous care is observed in selecting the above materials, in order to secure the full medicinal powers of their active principles, and we claim that the HUNGARIAN BALSAM OF LIFE has not only the happiest and most effective ingredients for its composition, but that it contains the LIFE of each ingredient in perfect combination. Wood Naphtha has attained a wonderful reputation for its powerful restorative powers in CONSUMPTION; but the numerous inferior articles and imitations called by its name have almost obscured the pure and much more expensive genuine, and, in consequence, the latter is seldom accessible to the majority of the people. It is guaranteed that none but the purest and best English Wood Naphtha is used in the HUNGARIAN BALSAM OF LIFE, and the Proprietors can show, by Volumes of Evidence, it stands positively unrivaled for

THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL
TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA,
WHOOPIING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

The above Medicines, now long established and staple throughout the South and West, are manufactured with the most scrupulous care by the Sole Proprietors,

MANSFIELD & HIGBEE,

Memphis, Tenn.

Proprietors, also, of the TEXAS TONIC SYRUP, for Chills and Fever; LA CREOLE HAIR RESTORER, HIGHLAND BITTERS OR SCOTCH TONIC, DR. BRAZIER'S LIVER MEDICINE, &c.

For Sale by Druggists and Dealers in Medicines Everywhere.

BE NONE GENUINE WITHOUT OUR PRIVATE PROPRIETARY STAMP.

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SHORT HORN COW, "MAY FLOWER."

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV. MEMPHIS, TENN., NOVEMBER, 1872. No. 1.



Farm Work for the Month.

Gathering the crop is the first and most important work that demands the attention of the farmer. Unfortunately, the drought, caterpillar and rust have materially diminished the amount of work to be done in the cotton fields, but what there is to be done should on that account be done with more than usual care. By clean picking, good ginning, and neat bagging, a considerable addition may be made to the ruling market price. We earnestly advise our planting friends, however low may be the price of cotton when they are ready to sell, if they have borrowed money to make the crop, or if they have received advances from their factors or commission merchants, to send forward without delay a sufficient number of bales, to repay every cent of their indebtedness. Honor, gratitude, and good sense combine to demand this. Yes, if it takes every lock of cotton that has been made, stand up to your promise, and sustain the men who sustained you in your hour of need. If you do not, and if you hold your cotton waiting for higher prices, those men who have by their advances of money and supplies enabled you to make the crop, must fail in their engagements, and the result will be the ruin of those who have trusted you and the loss of your credit in the future. We therefore indicate the full payment of the factor and merchant as a very important part of farm work for the month. After this is done, then hold if you will. The crop will certainly prove to be a short one.

VOL. IV, No. 1—1.

From its early maturity and the unusually large number of bales sent to market at the beginning of the season, the idea is entertained, or is pretended to be entertained, that the crop will be large, and prices have ruled low. When this delusion is demonstrated, prices will certainly react, and we advise all who own cotton and have paid their debts, to "wait a little longer," because, we think that there is "a good time coming, boys," and we want the producer and not the speculator to enjoy it to the fullest extent.

If, as we anticipate, Christmas of this year finds no cotton in the fields, the time thus left can be well and profitably employed in preparation for next year. Fences and gates need repair. Drains need cleaning. Ditches can be dug and much land now too wet for cultivation may be made fit for the plow. Farm buildings can be repaired, shelter for stock can be built, and the foundations of a manure pile can be laid both broad and deep. And this is not all. A portion of the time can be devoted to plowing; deep, close plowing, which will leave the land in a condition to gain the full benefit of the frosts, and to be ready in the early spring for preparation to receive the seed. Ordinarily the demands of the cotton crop render it difficult to give proper attention to this important work, but this year, when the picking season will close so early, we have the time and should use it diligently. We believe that early fall plowing is equal to a good coat of manure.

OATS.

If you have not yet done so, there is still time to sow oats. Supply yourselves with some of Young's "rust and smut-proof" seed, and sow at once on land well prepared and well manured, if it be not naturally rich.

Our experience is that fall oats well sown are a very certain crop, while spring oats frequently fail. We attach great value to a good crop of oats, because we believe that they are a more wholesome food for horses and mules than corn, and because we know that they are infinitely cheaper. Remember, in our advice to sow oats, we recommend that the land be well prepared, and not that a peck or two of any sort of seed be scattered over a dirty stubble and scratched in with a "bulltongue." Sow plenty of seed. For oats we have always found thick seeding pay the best, that is where the land has been made rich by nature or by art.

WHEAT.

There is still time to sow wheat. We have known first-rate crops gathered from seed sown in November. For directions as to preparation, seed, mode of sowing, etc., see September number. A very small area properly prepared and enriched, sown with clean choice seed put in with a drill, well covered, and then rolled with a heavy roller, will yield enough to provide a large family with flour enough for a year.

The best manure we know for wheat is plenty of cotton seed. From seventy-five to a hundred bushels to an acre can be profitably employed in this way.

FENCES.

While the statute books of the different States retain their present oppressive laws as to fences, we are compelled to submit, and as it is always wise to make the best of a bad bargain, we should see that our fences are as good as possible. Let the work be well done if done at all. It is costly to be sure, and with our present system of labor, very trying to the patience and difficult of attainment, but while we must build rail fences to keep our neighbors' stock out of our fields, let us see that the stock are effectively kept out, and that they are prevented from destroying our growing crops next year.

HOME-MADE MANURE.

We would renew our advice to pay more attention to the gathering and mixture of the ingredients for a large manure heap. By a little labor constantly employed during the winter months, a very large amount of fertilizing material may be collected, and with trifling cost in money. We are strong advocates of the use of the commercial fertilizers, but not to the exclusion of the home-made

article. We believe in both, and have generally found that the farmer who had the largest manure pile, bought most largely of the approved manures of commerce.

SHEEP AND TURNIPS.

Hoping that many of our readers have adopted our repeated counsel to plant largely of turnips, and that they now have fine turnip patches, we advise them to turn these turnips to the best account by feeding a large portion of them to sheep. Buy as many sheep of a good breed as you can feed and attend well. Fold them on some field you wish to enrich, moving the pens every week or ten days, and when spring comes you will have fat sheep for the butcher, or for home consumption, and a field well manured for spring cultivation. Try the experiment.

A MANUAL*

Of the Cultivation of the Grasses and Forage Plants at the South.

BY C. W. HOWARD.

[CONTINUED FROM OCTOBER NUMBER.]

When the second growth of pines has sprung up in a Bermuda grass pasture, and the summer and fall growth is not grazed, the grass under the pines will afford good winter feed for cattle and sheep. Thus Bermuda grass may be so managed as to afford grazing during the whole year. On land that is rich enough, both white clover and blue-grass grow well in connection with Bermuda grass. An evidence of this is familiar to thousands of persons in Georgia, in a portion of the grounds around the old Capitol buildings in Milledgeville. When the Bermuda grass in the open land in the winter dies down, the white clover and blue-grass spring and become green, and when they in turn in the hot summer disappear, the Bermuda grass remains green under the hottest sun. This is the perfection of a pasture. Taking the whole year, no pasture even in England is superior to it. Considering it by itself, the blue-grass of Kentucky is inferior to this combination of white clover, blue and Bermuda grasses.

As a mixture for lawns it is of exceeding beauty. With a lawn mower the Bermuda grass may be cut repeatedly during the summer, maintaining its verdure, and the other two will give a green carpet during the winter. This mixture will thrive on land made suffi-

*Entered according to Act of Congress, by C. W. Howard, in the Office of the Librarian of Congress, at Washington, D. C.

ciently rich even on the sandy lands of the coast. While writing these lines on the top of Lookout Mountain, in Tennessee, a pretty sward of Bermuda presents itself to the eye of the writer. It seems insensible to difference of soil or climate, up to a certain degree of cold, which it cannot endure. The winters of this mountain, nearly 3000 feet above the level of the sea, are not too severe for it.

The objection to Bermuda grass is, that it is very difficult to get rid of it when we desire to do so. But in a large number of cases is it desirable to destroy it? Cotton planters are accustomed to consider it only in its vexatious relations to cotton and corn cultivation. But let it be considered for a moment by itself. Farming is a matter of dollars and cents. If we have a piece of property that is paying a handsome interest on our investment, and with little or no cost or trouble, it is surely not wise to change hastily the form of that investment. We ought to be well satisfied with an investment that will pay us ten per cent. annual interest. Let the planter look over his plantation. Has he an acre in Bermuda grass that will not put more than \$3 worth of flesh annually on either his colts, cattle, sheep or hogs, counting in the trouble of keeping up the fence? Three dollars is ten per cent. on \$30. His acre of land in Bermuda grass is therefore richly worth \$30 to him. If it pays him \$5, which it will certainly do, his land is worth \$50 per acre. He ought not to desire to destroy his Bermuda grass unless he is sure, not only that he will get a better net gain by so doing, but that he will also be more rapidly improving his land, which is one of the great ends of good farming.

There are two methods of destroying this grass—one by the repeated use of the plow during the winter; this is the shortest process. The other is by inclosing and not allowing any stock to run upon the land for a few years. Bermuda grass cannot stand shade. It is the impression of the writer that a good growth of clover would kill it. But it is certainly destroyed by the broom-sedge, weeds, briars and bushes which spring up in a field which is not plowed, and to which stock are not allowed access. Land so treated will rapidly improve. The celebrated John Taylor, of Caroline, Va., the author of *Arator*, and perhaps the best agricultural writer that the South has produced, maintained that on our large farms inclosing was the cheapest and best method of manuring or improving land.

But Bermuda grass may be scotched, not killed, to the great benefit of the cotton planter, by the following treatment: If it is plowed two or three times during the winter it will be so subdued that a cotton crop may be planted on it during the next spring. The labor of cultivating the crop will be increased, but the product will also be increased. The same land may be put the next year in corn, and in the fall sowed in small grain. When the small grain is cut the Bermuda will begin to run, and if the ground be left uncultivated, but is grazed for two or three years, there will be a thick sward of Bermuda grass, on which the same rotation may continue to be repeated.

Under such a rotation, with two or three years in Bermuda grass, land would steadily improve.

It is true that the inversion of a Bermuda grass sward involves additional labor both of man and beast, and therefore additional cost. But the same man who shrinks from the expense of subduing Bermuda grass does not shrink from the expense of buying ten or fifteen dollars' worth of commercial fertilizers. Now no ordinary expenditure for fertilizers will produce an equal crop of cotton, corn or wheat to that produced by the inversion of a Bermuda grass sward. Let any planter set down and count the cost, and he will find that it will be less expense to turn under and keep under Bermuda grass than it is to buy commercial fertilizers, and with this great superiority in favor of the Bermuda grass, that it effectually prevents the land from washing. A piece of ground well filled with the roots, alive or dead, of Bermuda or other grass, will no more wash than will plaster, with its due proportion of hair, fall off from the side of a wall.

A kind Providence has given us two remedies for the scourging system of agriculture pursued by our predecessors and ourselves. One is the old field pine, whose tap-root pumps up fertility from the depths below. The other is this grass so dreaded by lazy men. On a very large portion of our exhausted lands, clover and the artificial grasses will not grow without manure. Many of us are too poor to buy manure, or are so situated that we cannot have it if we could buy it. Bermuda grass is the pioneer of agricultural reconstruction. It will grow on land too poor to produce any other grass fit for grazing. Give it time and it will make that poor land rich. Then if we prefer to do so, we may destroy it and substitute other crops or grasses for it.

This is said to be the Daub grass, so much venerated in India. At the South it has received cursing rather than blessing. But, unless the writer is greatly mistaken, it will prove itself one of the best reclaimers of the South in regaining its lost fertility.

It would be improper to close these remarks upon the natural resources of the South in the way of native forage plants and grasses without reference to the value of our common cane as a winter food for mules and cattle. Our canebrakes should be preserved with the greatest care. Where they have been destroyed they may be renewed by inclosing and keeping hogs and fire away from them. If cattle are turned in the fall fat into a canebrake they will not lose flesh, but improve until grass comes again. With a judicious management of cane in those portions of the South in which it grows, vast herds of cattle might be kept at trifling expense. As the cane is a swamp growth, cattle could be driven into the cane pasture in the morning and driven out and penned at night on poor upland, thereby making it rich without damaging the cane ground.

Without reference to the artificial or cultivated grasses, we have the following natural reliances for live stock food during all seasons of the year: Terrell grass and cane for winter pasture; Gamma, crab and crow-foot grasses for hay; Bermuda, the sedge, and other common grasses, including crab-grass and crow-foot, for spring, summer and fall grazing.

With these reliances alone, sheep and cattle can be raised at the South to decided profit. They will enable the poor man to begin stock raising, who cannot afford at once to make his lands rich, or to buy grass seeds which are expensive. As his means improve he may add such of the artificial grasses as may be adapted to his particular locality.

In large portions of the South there are creek and river bottom lands which are now utterly useless. They are too wet for reliable cultivation with the plow, and are grown up into impenetrable thickets of briars, vines and bushes. If such land is grubbed in August, and the timber where it is too thick is thinned out, and if the next season hungry cattle, sheep or goats are kept upon it they will destroy the sprouts, and in a short time the natural winter grasses will form an excellent winter pasture. These grasses will spring up spontaneously. Thus with a little labor, at a season of comparative leisure, a piece of profitless property may be made profitable in a double sense—

one of fattening stock in winter at no other cost than the interest on the land, and the other of making that stock, by penning at night, an improver of land which requires improvement.

Time is sometimes a great liar. He clothes error with gray hairs and makes it venerable. There are many persons who prefer an old error to a new truth. While long existing opinion should be approached with caution, it should be, if the expression may be allowed, with bold caution. That which may have been sound policy in one condition of affairs may be very unsound in another. Our fathers made nothing but cotton and corn. They thought they did right. But because it may have been right for them, it does not follow that it is right for us. We have never availed ourselves of the full natural resources of soil elements and products with which God has blessed us. When we have thus availed ourselves, and to these natural resources have added the appliances of modern agricultural science, the South will have attained a prosperity which will make her a marvel among the peoples of the earth.

WINTER GRASSES.

One of the most marked and singular advantages of the South is its ability to grow grasses which may be pastured in the winter. It is a blessing of climate which we have not yet appreciated. The raising a full supply of horses, mules, cattle, sheep and hogs for our own consumption is an absolute essential of skilled agriculture. For all of these, except the hog, grass, either green or cured, is necessary. The cost of cutting and saving hay has been greatly reduced by the use of improved implements. Still it is something. Beside the cost of the hay is the cost of the barn to store it in, and in addition the cost of feeding it out. A barn sufficiently large to hold the hay for a considerable stock is an expensive affair. Nearly all of this expense is saved by good winter pastures. The stock upon them do their own mowing, and are their own barn. Exceptional periods occur, as in a heavy freeze or severe storm, when some hay must be fed. By the aid of the winter grasses, it is perfectly practicable to raise colts, cattle and sheep throughout a large portion of the South, without other cost than the interest on land and the value of the salt. The first object of the farmer who designs to grow the grasses, should be to sow those which are green all the winter. "Roughness," as it is called, may be temporarily secured by sowing corn, peas, millet and oats.

But there is no adequate substitute for winter grass pastures. Oats, barely and rye may be grazed, but the stock must be taken from them at a season when the necessity is most pinching, and besides they must be sowed annually, which is expensive. They are decidedly to be preferred to no winter pasture, but are very inferior to permanent grass pastures.

MEADOW OAT GRASS.

This grass deserves to be placed at the head of the winter grasses for the South. It has the double advantage of being a good hay as well as winter pasture grass. It does not answer well on most land. Rich upland is the proper soil for it. On such land it will grow from five to seven feet tall, completely hiding a man walking in it. It will grow on more sandy land than most of the artificial grasses. Hence it is well suited to a large portion of the soil of the cotton belt, perhaps better suited on this account than any other upland grass. The yield of hay on rich land is large and the quality is excellent. It matures rapidly. Seed sown in the spring will produce seed in the fall. The seed is ripe when the stalk is green. It shatters easily, and the seed must therefore be saved in time. If it be desired to save seed, it is best to cut off the heads with a cradle and tie in bundles as grain; afterward the rest can be mowed for hay. This is a great advantage of being able to save hay and seed from the same crop. Of a wet season it may be necessary to cut a second crop. After it is cut no stock should be allowed to graze it, during the summer and fall. The rowen or aftermath, or aftergrowth, all of these names being used, should remain until Christmas, then the stock may be turned upon it in dry weather and remain during the months of January and February. If it be not designed to make hay, they may be continued on it until the other grasses spring. The amount of green food yielded by this grass during the winter is greater than that of any other grass. On rich land at Christmas, the ends of the leaves will have turned yellow, but there will be found an astonishing mass of green grass beneath, which live stock eat with avidity; this, according to Flint, is the ray grass of France. The seed is very light and chaffy. It is proper to sow two bushels to the acre. It is a tussock or bunch grass, not spreading from the roots, hence the necessity of heavy seeding. The amount of seed required makes the beginning expensive, but if sowed by itself, an acre will give a large

amount of seed, and subsequent purchases become unnecessary.

In this connection it will not be amiss to make some remarks on winter pastures generally.

They must not be pastured when the ground is wet; at such times all stock must be removed from them. They must not at any time be grazed too closely. Everybody knows how to treat a rye or barley lot. It is well known that if stock bite into the crown of the plant it will be killed. Winter grass pastures must be treated in the same way with grain pasture. The temptation to transgress in this particular is very great. When all other vegetable matter is dead, live stock become almost crazy for green food, and they are suffered by the sympathizing owner to remain while a particle of green food is visible. As a consequence of this practice persisted in, the grass is killed. It will be better to buy fodder, if it be necessary, rather than allow a practice so ruinous to the farmer.

In order to make winter pastures valuable, the ground should be heavily manured. This manure may be given to the preceding cotton or grain crop. The winter pasture should be the richest land on the farm. It should be prepared as for a barley lot. It is impossible to make something out of nothing. The artificial grasses are highly concentrated food, and it is out of the question to raise them on poor, or even moderately fertile land.

In all well-cultivated countries, it is conceded that the wisest use of manure is to apply it to meadow land. How much more valuable is it to apply manure to land which gives all the good results of hay without the cost and trouble of cutting, curing and housing it? In any movement toward an improved agriculture at the South, the first step should be the laying down of rich winter pastures.

ORCHARD GRASS.

This valuable grass ranks next in importance to the fall meadow oat-grass for hay and winter pasture. It succeeds very well at the South on drained and dry bottom land, or on rich upland. There is a peculiarity about it. The writer has never observed it to spread from the scattering of its own seeds. From some unaccountable reason the shattered seed does not vegetate, if, therefore, it be sowed too thin it does not fill the gap, and presents an unsightly appearance and gives inferior grasses a chance to occupy the vacant space.

Orchard grass for hay should be cut as soon as it begins to blossom; if cut then, the hay is sweet, tender and nutritious, but if the cutting be deferred until the seed has formed, the hay will be hard and valueless.

After cutting, orchard grass springs rapidly, and the aftergrowth is heavy. This should not be pastured during the summer or fall, but should be reserved for winter grazing. It should be treated as above directed in the case of the tall meadow oat-grass.

[TO BE CONTINUED.]

For the Southern Farm and Home.

Ashes and Gypsum as a Top-dressing for Wheat.

MR. EDITOR—I have seen recently in a Northern paper (I think it was the *Sun*) a piece in which a mixture of wood-ashes and land plaster (gypsum) was recommended as a top-dressing for wheat. The recommendation is good. I have used the mixture frequently, and always found most excellent effects from it, both in the vigor of the growth and the size and quality of the grain. I carefully gather up every year all the ashes that are made on my own farm, and all that I can get from my neighbors, and I mix with them about one-third of their bulk of land plaster. After the wheat is well up I scatter the mixture over it at the rate of sixty or seventy pounds to the acre, choosing a day when it is likely to rain. I find that the top-dressing gives the wheat a good start, makes it grow stronger and quicker, and imparts to it that deep green color which indicates healthy growth. This stimulant seems to last all the growing season until harvest. I think, too, that the mixture is a preventive against rust, but of this I am not as positive as I am that it is a good fertilizer. I believe, however, that if I could give the crop a second top-dressing of the mixture, when it takes its start in the spring, it would prevent rust and increase the yield. I mean to try it next spring.

Last year I had not quite enough ashes to top-dress all my wheat, and nothing could be more marked than the difference between the dressed and the undressed parts of the crop.

The cost is very small—nothing compared with the value of the result—and every farmer can easily procure the ingredients. I use leached as well as unleached ashes, and am inclined to believe that the one is quite as beneficial as the other. I am no chemist and can-

not explain the reasons why this is so. I can only speak from experience and observation, and I write what I know for the benefit of others, in the hope that they may find the application of the mixture as profitable as I have found it.

D. McC.

NEAR ABINGDON, VA., Sept., 1872.

Cotton Seed Meal as a Fertilizer.

Of all the crops that we raise, cotton is the least exhaustive of the fertility of the land, as the lint of a four hundred pound bale only takes from the land four pounds of the ingredients of the soil, while a corn crop of thirty to thirty-five bushels per acre abstracts between thirty-five and forty pounds. This calculation is based on the supposition that the nine hundred and fifty pounds of seed of a four hundred pound bale, containing thirty-five or forty pounds of the most valuable and expensive soil ingredients, namely, potash and phosphoric acid, are returned to the land which produced them.

If the seed also are withdrawn, or rather, withheld from the land, cotton, instead of being the least, becomes the most exhaustive crop.

These are facts which farmers either do not know or rarely consider, otherwise the tens of thousands of bushels of cotton seed which are yearly sold and removed from the farm, or are wasted, would be carefully husbanded and faithfully restored to the land. The best and most effective way in which the seed can be employed as a fertilizer, is in the shape of cotton seed cake or meal, in which form its ingredients are readily available as plant food, and become thoroughly incorporated with the soil.

By converting the seed into meal, nothing is lost but the remnants of lint that adhere to the seed after the most careful ginning, and the hull, neither of which is of any use as a manure, but rather a disadvantage, as the oil of the seed retards decay, and the hull obstructs the access of the moisture which produces the decay, which must be complete to evolve the gases which stimulate plant growth, and to afford the mineral nutriment which the decaying substance contains.

No planter, therefore, should dispose of his cotton seed on any other condition than the return of the seed in the form of cake or meal. The oil which is extracted will pay for the manufacture of the cake, and thus a cheap, and, chemically considered, highly valuable

fertilizer, can be provided at home, which will indefinitely sustain the productiveness of our lands.

No man who has the least claim to be considered a good farmer, should ever sell a single bushel of cotton seed to be exported from his farm. The return of the cake in the place of the raw seed should be as much a matter of course as the return of the meal in place of the corn sent to mill.

It is alarming, however, the extent to which cotton seed are exported to the North and to Europe, while we complain that we cannot keep our lands in good heart, and that we must move away to fresh soil or starve to death on the old in a few years. When we sell our seed for a few dollars for present use, we really part with the essence of the fertility of our land, which we vainly strive to make good afterward by the application of artificial manures which cost ten times more than we received for our cotton seed, and are frequently not worth one-twentieth of what we pay for them. Our piles of cotton seed are now growing. They represent the vital elements of our land. Let not a trifling present gain induce us to part with them. On the contrary, let us contract with some oil factory to take the raw seed and return us the cake or meal, and if we cannot do this let us keep the seed, and by composting cause them to decompose upon our farms, and as religiously return them to the land as we would pay any other debt that we justly owe.

For the Southern Farm and Home.

Deep Plowing.

The first operation of agriculture upon which the success of crops mainly depends, is the proper preparation of the land—deep plowing and thorough pulverization of the soil.

There are numbers of farmers, who are intelligent or are supposed to be so, who decry deep plowing, because, they say, it "kills the land" and breaks down the mules. They mean by killing the land that too deep plowing in thin, worn land will bring to the surface the cold clay which will injure vegetation. To a certain extent this is true, and we do not recommend turning up upon the surface too much of the clay, but our purpose can be effected without this. We can break the land deeply without turning it up, thus giving the roots of plants a wide range through which they can penetrate in search of nourishment and moisture, and giving the land porosity and mellowness, to

a depth which the heats of summer cannot, but which the fertilizing elements of the atmosphere can reach. This object can be attained by an ordinary turn-plow followed by a subsoiler.

But even if deep plowing involved necessarily the bringing to the surface a large quantity of the cold and barren clay of the under-soil, we should still recommend it. The surface soil of thousands and thousands of acres, which is now sacrificed by our system of plowing, does not pay for its cultivation. It is labor lost to till it at all. Persistence in this mode of cultivation is the cause of the disappointment, and despondency of so many planters. It is the cause of their poverty and of their debts. It is the cause of their inability to extricate themselves from their embarrassments. With our present altered system of labor, heavy taxation, and other burdens, we must farm well to be successful. An ill-prepared field costs as much, nay, more to cultivate, as one prepared in the first style of the art. The first will yield, perhaps, one-fifth of a bale of cotton to the acre, the latter will produce a bale to every acre. But I said that even if the subsoil brought to the surface "killed the land" for present use, I would still recommend it, because in time this cold clay under the fertilizing power of the light, heat and air would become more fertile than the surface soil, and this poor land, which it is not profitable to cultivate now, may be converted into land which will yield abundantly and defy drought. If this be doubted, let the doubters inquire into the history of deep plowing and subsoiling on the bleak hills of Scotland, where the stiffest clay subsoils are broken to a depth of from sixteen to twenty inches, and have become, in a few years, so mellow, to that depth, that there is no perceptible difference in the color and quality of the surface and under-soil; and if they are not satisfied, let them ask how the thinnest soils of New Jersey are made to produce greater crops than we know anything about, and to resist the influence of the most protracted droughts. Shallow plowing is a criminal waste of time. It is poverty for the land that is made to submit to it. It is poverty for the farmer who practices it, and for those who come after him, and it is poverty for the country that endures it. I would sooner have twenty acres of land broken and pulverized to a depth of fifteen or sixteen inches than two hundred acres with a couple of inches of surface soil. The twenty acres will produce more at one-twentieth of the cost of

cultivating, and they will be still productive and remunerative when the two inches of surface soil, on the two hundred acres, have been washed away in the gullies by which their face is seamed in every direction. Mrs. Glass, in her famous receipt to "catch the hare," as a necessary preliminary to making hare soup, stated a fact, the justice of which all have admitted. In giving a receipt to renovate and improve land, deep plowing is as necessary as catching the hare.

TWEEDALE.

How shall we get along without being Obligated to Borrow?

We have received several letters within a recent period from some valued friends and acquaintances, in which they complain bitterly of their poverty, and of the sad fact that work as they will all the year, they "come out in debt" to their factors and commission merchants, and ask us how they can "get along without being obliged to borrow."

There is no more thankless task than to give advice to people who, you know before hand, will refuse to follow it, but if out of the number of inquirers we could show only one how "to get along without being obliged to borrow," we would gladly undertake the task.

Before we do so, however, we would ask a few questions in order that we may fully understand the case, and prescribe more intelligently.

Do you try to live now in the same style and after the same manner as you used to live before a disastrous war and a still more disastrous peace swept away all your accumulated wealth, leaving you nothing but your land, your intelligence and your industry wherewith to repair your fortune? Do you and your family reside upon your plantation, or do you live in a fine town residence, drive a fine carriage, wear fine clothes of the latest fashion, and "go into society," incurring daily all its attendant expenses? Do you stay at home and look after your business, or do you delegate this duty to an overseer or manager while you go to "the springs" or to Europe? Do you admit to yourselves and to the world at large that you are poor? Do you practice a strict economy, wearing old clothes if necessary when you have not the money to buy new, buying for cash, accommodating yourselves to circumstances, using your intellect and energy to rebuild your shattered fortunes, or are you ashamed to own that you are no longer rich,

and do you live and dress beyond your means, maintaining as nearly as possible the same way of living you were accustomed to before the war, purchasing on credit whatever your fancy dictates—in short, keeping up appearances, and making believe that you are still rich?

Do you order your overseers to plant every available acre of your plantation in cotton, hoping to make a big crop, and sell it at 25 cents a pound, and thus have "oceans of money" to buy meat and bread and everything else you need, besides paying your debts, or do you see to it yourself that your plantation is made self-sustaining, and that your corn-cribs and smoke-houses are always abundantly supplied with corn and meat of your own raising?

Do you believe in the truth of Poor Richard's maxim, "If you want your business well done, go yourself; if not, send another;" or do you think that you can farm profitably by living in town, "going into society," spending your summer at the springs or on the Rhine, and leaving a manager to attend to the farm?

If you will candidly answer these questions, we will tell you what chance there is of your being able "to get along without being obliged to borrow."

For the Southern Farm and Home.

Gathering Manure.

There is not one planter in a hundred, except perhaps it be among the favored few who own and plant the inexhaustible alluvial lands of the Mississippi and the Arkansas and their tributaries, who will not admit the importance of applying manure to the land, and thus giving it back a portion of the fertility we have taken out of it. Ninety-nine out of a hundred admit this, but not five out of a hundred make any effort to practice it. They "have not time," they "cannot keep stock," they "have no conveniences," "nothing can be done with free niggers," are among the many excuses given for the non-performance of an acknowledged duty. To these men we say, you have time if you will only employ it. One hand and an ox-team and cart kept steadily employed all the year round, gathering manure, will collect a pile which will manure thoroughly upward of a hundred acres. You can keep stock, and good stock, too, if you will take the necessary trouble. If the Yankee farmer, who is obliged to keep his stock under shelter for eight months in the year, can keep them and make money, is it not plain that we can do so, with our short winter

and almost perpetual spring? It is true that in some places you have "no conveniences," that you must build shelters, inclose a yard, and construct a place wherein to gather and save the manure. You might as well say you cannot have a supply of water, because you will not take the trouble to build a cistern or attach gutters and pipes to your houses. You can make "free niggers" attend to your buggy or saddle-horses, by giving the matter your own personal attention. If you gave it no attention, you would find the horses sadly neglected. Give the same attention to the cows and hogs, and not only will you be able to save manure, but you will find your stock more thrifty and more profitable. If we would keep our stock in stalls at night during the winter, giving them plenty of good food, and in the day during the summer, when the heat and flies trouble them, feeding them on green food, keeping the stalls fresh and clean, mixing muck, woods-earth, straw, leaves, and other absorbents with the droppings, sprinkling plaster over the heap occasionally as it grows, to fix the ammonia, the manure heap would grow wonderfully, and the stock would thrive in a manner that would be surprising. If we leave our stock to shiver through the winter on the bare fields we call "pastures," giving them hardly food enough to maintain vital heat, and if we allow them to pant and fret under the sun and flies of summer, wasting all their manure, we cannot, of course, gather manure or keep stock, nor can we get out of debt or live comfortably. Every year that you try to make crops on uplands without manure, you will become poorer, until finally you will be obliged to give up altogether.

Construct a stable with a roomy stall for each head of stock. Let each cow be fastened in her stall. In the rear of the plank floor of the stalls, where the droppings fall, strew muck, woods-earth and leaves. Make an excavated yard in rear of the stables, and if this be cemented like a cistern so much the better. Round this the places for the hogs can be built. Let the manure from the stables, and all the trash round the lot be thrown into this yard every day. The hogs, rooting through the heap and trampling it, will mix it thoroughly and compost it in time for use. The outlay for these "conveniences" would be inconsiderable, and whatever it might be, the value of the manure, and the improved condition of the stock, would very soon repay it.

HOMESPUN.

For the Southern Farm and Home.

The Burden of Debt.

MR. EDITOR—Go where you will in our cotton States and you will find the people gloomy and despondent, I might almost say hopeless. They have toiled all the year, and now they find that their crops at present prices will hardly pay them out of debt, leaving them nothing for another year.

There never was a greater mistake than that debt is a stimulus to exertion. I do not believe a word of it. I believe that the consciousness of being free from debt, owing no man anything, is the only stimulus for the farmer; and now that we are about to close the agricultural year and enter upon another, I would try to impress this doctrine upon my fellow-farmers in every State of our beloved South.

It is every man's experience that when he pays as he goes, making it an invariable rule for himself and his family, never to buy anything unless he has the money to pay for it, his expenses are much less than those of the man who buys on credit, and he lives better and more comfortably. Let a bill at a store run for twelve months, every member of the family buying what he pleases, and how infinitely larger it is than you supposed. How many more things are charged than you had any idea you had bought, and how many of them you could have done without, and would have done without if you had been obliged to pay cash down! While a man can buy all he wants, or fancies he wants, on credit, pay-day being away yonder in the future, he is rarely economical. He will not wear old or shabby clothes, if by sending an order to a store he can procure fine new ones. He will not be satisfied with plain living, if by the simple exertion of writing a note he can procure luxuries. And so through the whole catalogue of his expenses. The tendency of long credit is to extravagance, as the tendency of cash payments is to economy. Pay-day will come. The long store-bills must be paid, and then comes despondency, and the crushing influence of debts which cannot be paid. No man loaded down with debts works as well and as hard as the man that is free from debt. The one works as if obliged to work for the benefit of another. The other works with the cheering consciousness that every lick he strikes is for the benefit of himself and his family. I wish our people would resolve to get out of debt, live within their means, however small they

are, "live poor" if need be, be content to do without the gew-gaws and trappings of rich folks, buy only the necessities of life, and try to own at the end of the year the fruits of their toil. Then we should not hear the cry, "all we make will have to go to pay the merchant." Of course if you will buy the merchant's wares you must pay him. He has a perfect right to expect that you will pay him every cent you owe him. He must pay his debts, and can only do so by your fulfilling your obligations. But it is your own fault that you owe him so much. You might have done with much less, and had you paid cash you would have done with much less. You draw on your crops, discount the notes and spend the money before the crop is made. You plant always for a big crop, and expect to get a big price, and you live accordingly. It often happens that you make a poor crop, get a poor price, and have to pay big bills out of the proceeds, and then with a load of debt on your shoulders, you begin the work of another year feeling that most of what you make will "go to pay the merchant." Advise your readers, Mr. Editor, to get out of this rut and take for their motto John Randolph's advice,

"PAY AS YOU GO."

For the Southern Farm and Home.

Stall Feeding Cattle.

MR. EDITOR—I have just returned to my home after a trip of between two and three months in the Northern States, and chiefly in New England. I hate to own it, but it is the truth, that in many things connected with what is called improved farming they excel us vastly, although their land is naturally far inferior to ours, and their growing seasons is three, and in some localities, four months shorter than ours. I attribute their success to the value which they put upon manure, the care they take to collect it, and the liberality with which they apply it to the land. Twenty topping two-horse wagen loads to the acre are not considered an unusually large application of manure.

The way this large amount of manure is collected, is by soiling or stall feeding their stock both winter and summer. These people who practice this system, assured me that it is less expensive in time, labor and money, than allowing the stock to run on pastures, and as they are proverbially shrewd and calculate closely, I am satisfied that they are right, for, were it otherwise they would not continue the practice.

They argue that all the cost of building and repairing of fences when cattle are pastured is saved by the soiling system; that it takes two thirds less land to keep a cow in perfect condition when stall fed than when she is pastured, one acre well cultivated and enriched being ample to produce food to be consumed in the stall, while three acres are requisite to pasture a cow during the grazing season, in addition to the extra food which must be given during the winter. The cattle fed in this way look sleek and fat, and healthy, and then the piles of fine rich manure that are collected.

With our facility to raise clover, lucerne, drilled corn and the grasses, we certainly ought to succeed if the people of New England can do so, and we may take it for granted that it will pay, because they do it. We must redeem our waste lands and restore their fertility. Manure alone can do this. "Making meat," says Mechi, "is the cheapest way to make manure," and it is true. I have seen its truth proved by the manure piles I have seen in Yankeedom. From June until frost, drilled corn, millet, lucerne and peas will afford abundance of green food to feed our stock in their stalls, and rye, clover hay, bran, and meal will feed them during our short winters.

DeSoto.

October 2, 1872.

For the Southern Farm and Home.

Manufacturing at the South.

MR. EDITOR—I am glad to see that you have given the aid of your pen to the cause of cotton manufactures at the South, and that you see in them a sure and speedy way to rebuild our material fortunes on the most substantial and enduring foundation. You have shown conclusively the profits to be derived from such enterprises, but you have not touched at all upon what I consider their greatest benefit to our country, namely, the impetus they will give to other industries, and the large and rapid immigration to which they will necessarily give rise. Once establish a good cotton mill in a city, town or village, and you lay the foundation of factories of all the materials required in its manufacture, such as iron foundries, machine shops, tanneries, dyeing houses, bleaching establishments, oil mills, etc., etc. The demand creates the supply, and the one cotton factory brings into existence the various industries I have named, with their large crowds of hands, all of whom have to be fed and clothed, and

consequently create a home market for the products of the surrounding country.

The old world has long since experienced the advantages of manufactures. What has given Manchester, Preston, Leeds, Birmingham, and the other manufacturing towns of England, the boundless wealth and teeming population they possess? Their manufactures, and they only. What has made arid and inhospitable New England the most prosperous part of the United States? Manufactures alone. And whence this wealth and prosperity? They are derived mainly from the manufacture of the cotton raised in Mississippi, Arkansas, Tennessee, Georgia, and the other cotton States. Old England takes a thousand million pounds of our cotton, costing her, say \$200,000,000, and by manufacturing it increases its value to \$500,000,000. New England makes a similar or even greater profit; and while the two Englands are thus coining gold by the hundred millions, we swagger about "king cotton," and after toiling and moiling from one year's end to the other, have barely money enough to pay for a few yards of the shirting and sheeting which the John Bull or the Yankee have made out of our crop.

Look at New England, with its rocky, unproductive soil, and harsh climate. The operative population of Lowell, Mass., employed in cotton mills alone, is, I am informed, close on 50,000. What brought this large population there? Manufactures. Our land is far more favored. We have a soil of unsurpassed productiveness; the finest climate on the earth; the monopoly of the raw material; and it is not arrogant, certainly, to say that we have as much brains as the yankee. Why, then, do we not take advantage of the position in which a bounteous Providence has placed us? Why do we delve and dig forever that Lowell and Manchester nabobs may add to their already colossal fortunes? Why are we poor as Lazarus while they roll in wealth? I will tell you. Because there is hardly a town in New England or in the northern part of England where you do not hear, all day and night, the buzz of machinery, the panting of the steam engine, the whirr of the driving-wheel; and because, in our towns, this music of industry and thrift is, with few exceptions, never heard. And yet, we could have the raw material from 2 to 3 cents a pound cheaper than the Northern or English manufacturers, and we can have labor from twenty to thirty per cent. cheaper. We can save in fuel, light, transportation, wastage,

labor, etc., so that our cotton would cost us fully 5 cents a pound less than the foreign manufacturer. These are facts, Mr Editor, which can be easily proven. These are advantages which nobody can deny. But notwithstanding this, the cloth of every shirt we wear is made and stamped by a yankee. How long must this continue?

SOUTHERN ENTERPRISE.

Dogs vs. Sheep.

We publish the following forcible article from the *Western Rural*, as containing exactly our own sentiments on the subject to which it refers, and in the hope, not too confident, however, that it may exercise some influence over those sapient gentlemen who make our State laws and profess to desire to encourage and protect the industrial interests of their constituents. We have already more than once attempted to show that a farmer, having a flock of sheep within his own enclosure, ought to have some legal remedy if they are all mangled or killed by dogs, and that even in a purely material view of the subject, a fine Cotswold sheep is more worthy of legislative protection than a mangy cur. But the number of sheep at the South is daily decreasing, and the number of worthless dogs multiplies hourly:

LOVING THE DOG IS HATING THE SHEEP.

If the killing of sheep each year by worthless curs could be accurately estimated, the losses inflicted upon shepherds thereby would be one of the most eloquent arguments in favor of laws for the protection of shepherds against the depredations of dogs upon their flocks; and it would, as a matter of course, also reduce the number of vile curs constantly prowling about our cities, villages and farm yards. Some one has said, "The death of each dog would render the keeping of an additional pig possible."

We might, however, tolerate dogs if what they legitimately ate was the only measure of their cost. The question of dogs vs. sheep has been heretofore discussed in the *Western Rural*, and also in various agricultural papers, from various standpoints. That it has borne good fruit is evident from the fact that it is being discussed by many of the papers devoted to general news. The *Nashville Union and American*, one of the most influential journals in Tennessee, has the following:

"Our legislators are singular in their estimate of their duties. They are selected because it is believed that they possess qualities which will make them efficient lawgivers. The first duty of a lawmaker is to see that the great industrial interests of the State are fostered; that proper encouragement is given to those branches of industry upon which the prosperity of the State depends. Not to enact a law because it is unpopular, is to place the present passions of

men against the wisdom which has sprung from time. To say that a lawmaker should repeal all laws against stealing because stealing is popular, or against dueling, because the latter is practiced by gentlemen, would be to lower the lawmaker to a level with the pandarer. The highest duty of a legislator should be to enact laws for the protection of property. If sheep are property, they should have the protection of the law, and when a depraved public sentiment denies that protection, it is time our courts, unless they are worthless, should step in and see that the citizen is protected in all his rights. Many of the counties in the State lose a great portion of their profits because there is no encouragement given to wool-growing. With wool and mutton at high prices, it is utterly futile for any one to engage in the sheep-growing with our present laws. Whenever dogs are permitted to roam unmolested, and with the quasi protection of our laws, there can be no sheep grown. Dogs and sheep can not live at the same time and on the same place. For want of proper protective laws, the State of Tennessee is losing millions of dollars every year. With her mountain ranges and hills admirably adapted to wool-growing, she yet has not sheep enough to supply her own demand for mutton and wool, and in place of sending away large quantities of wool and mutton, she is actually importing them from other States. It is a crying shame that dogs of the State, whose hair never clothed and whose flesh never fed a human being, should practically exclude that animal which clothes the greater part of the civilized world, and whose flesh is the most wholesome that is consumed."

For the Southern Farm and Home.

How to Prevent Hog Cholera.

MR. EDITOR—I see a great deal in the papers about hog cholera and how to cure it. It is all very true, perhaps, but I think I could tell you how to prevent it, and you know "an ounce of prevention is worth a pound of cure." At all events, if my ounce is of no value it will not cost much to buy it. I can only say that since I begun to use it I have never lost a hog with cholera. I feed my hogs always in a trough—never on the ground. I give them once a week, at least, mixed with their food, some powdered charcoal. I find they like the charcoal—at least they eat it all. Then once a fortnight, or, perhaps, three weeks, I give them a little sulphur mixed with their food, one meal of which daily is cooked. I believe strongly in cooked food for hogs, and I am fixing now to be able to cook all the food I give to my fattening hogs. As I said before, I have not lost a hog with cholera since I used the charcoal and sulphur, and I might also say I have never had a mangy hog. My stock of

hogs is almost pure Berkshire with the least streak of the Essex in them. I expect to kill a good many this fall, and do not think I will have one that will weigh less than three hundred pounds dressed for cutting up. J. T.

NEAR CHATTANOOGA, TENN., October, 1872.

For the Southern Farm and Home.

Wise Legislation.

MR. EDITOR—The Legislature of the State of Georgia, at its last session, passed a bill exempting cotton and woolen factories from taxation for ten years from their foundation. There is a heap of practical wisdom and sound far-seeing policy in this legislation, and it would be well if other State legislatures would imitate so good an example.

Georgia is already far ahead of all the Southern States in manufactures. She has now over 150,000 spindles in constant motion at Augusta, Columbus, Roswell, Macon, Athens, and other places. The Augusta factory pays regularly a dividend of twenty per cent. per annum, and has an accumulated reserve capital of \$300,000. Its sheetings, shirtings, oenaburgs and drills are equal to those of any factory in the world. The Eagle and Phoenix mills at Columbus have also been eminently successful—paying large dividends, running about 20,000 spindles, and turning out in addition to the ordinary sheetings, etc., cotton blankets of the finest and softest texture and most beautiful appearance.

There are a number of other prosperous mills at Covington and other places, and under the beneficent enactment to which I have referred, their number will be largely increased within a short time.

I send you a copy of the law, which, if you will publish, may attract the attention of the legislatures of other States and induce them to go and do likewise.

COVINGTON.

NEWTON CO., GA., October, 1872.

AN ACT TO ENCOURAGE THE MANUFACTURE OF COTTON AND WOOLEN FABRICS IN THE STATE OF GEORGIA.

SECTION 1. *Be it enacted*, That for the purpose of inducing the investment and employment of capital in the manufacture of cotton and woolen fabrics and yarns within the State, any individual or individuals, and any body corporate that shall hereafter invest money to be employed in the erection and operation of any mill or mills within said State for the manufacture of fabrics, out of cotton or wool, or both, whether such investment be applied in the establishment of a new factory or in the extension or enlargement of a now existing

factory, shall be exempt from taxation for State, county or municipal purposes on the capital so invested, and on any property purchased or erected therewith intended for and necessary to such manufacture, for the term of ten years from and after the laying of the foundation of the mill so to be erected. And it shall be the duty of the individual or individuals, or body corporate claiming the benefit of such exemption, to report to the Comptroller General of the State the amount of the capital so invested, and the time when the foundation of the mill reached the surface of the ground, and where situated; *Provided*, That in case of the extension or enlargement of any factory now established and in operation, this act shall not be so construed as to exempt from taxation investments made and applied to such purpose prior to the passage of this act.

Sec. 2. It shall not be lawful for any State, county or municipal officer to require any individual or individuals, or body corporate, who shall make such investment as described in the first section of this act, after its passage, and shall give notice thereof to the Comptroller General, as therein provided, to return for taxation, or to pay any tax upon capital invested, or upon property so purchased or erected within the time of said exemption, any law, custom or usage to the contrary notwithstanding.

For the Southern Farm and Home.

Preserving Farm Implements.

MR. EDITOR—Poor as we are, we are a most extravagant people; perhaps, I should have said, thriftless; but I will let it go at extravagant. We buy every year new implements: axes, hoes, rakes, shovels, plows, &c., whereas, if we would only take a little trouble, we might make those we buy one year answer our purpose for several years. A gallon of linseed oil and a brush properly used would do the business for a large farm. If whenever we bought a new hoe, rake, spade or shovel, we would saturate the wood with the oil and let it dry before using, we would never have a handle splitting, getting loose or cracking, as is now the case, resulting in the throwing aside the tool, and sending to buy another at the store to meet a similar fate. Our tools cost a heap of money if we count them all up. If they are the best—and we ought to buy none other—they should be economically used, taken good care of, and made to last as long as possible. Use the oil-can and the brush, make the laborers bring the tools home every evening and put them away clean. Do not allow them to be left sticking in the ground, in the corner of the fence, or under the shed. How often have we seen the plows left exposed to the weather from one season to another,—the moldboards

an inch thick of rust, and the woodwork split and cracked in every direction until they are almost unfit for use of any sort, and wholly unfit to do good service. Had they been properly sheltered, the wood, the iron and steel parts brushed over with a little oil, they would have lasted for years, and saved the poor farmer many a dollar. So also with wagons, buggies, harness, wheelbarrows, &c. We give a couple of hundred dollars for a fine wagon or a buggy, and from the time we buy it until it drops to pieces from neglect, it is never cleaned, and rarely ever put under a shelter.

Is such conduct extravagant or thriftless, Mr. Editor?
STITCH IN TIME.

For the Southern Farm and Home.

Draining.

MR. EDITOR—Let those who have drains to make prepare to make them now. They can not do a better business or one that will pay them better. The drained soil next spring will be ready for planting fully two weeks earlier than the undrained. It will be more easily cultivated all through the year. It will mature the crop fully two weeks sooner, derive double the advantage from the use of manure, and finally yield a crop much larger in quantity and better in quality than the undrained soil.

Now is the time to begin. Let those who do not believe this try the experiment, and publish the result this time next year.

DEANSTON.

From the Potato Book.

Digging and Care of Potatoes.

From planting to cooking, and in all processes between and inclusive, potatoes are unquestionably the most abused things ever cultivated for human use; and in the long catalogue of errors peculiar to this excellent esculent, one of the most outrageous is neglecting to harvest as soon as they are ripe. No other crop was ever maltreated in this way. When any other crop is fully matured, the farmer secures it at once, lest it wastes and decays. But potatoes, being out of sight, are out of mind until a convenient season. When the farmer can find nothing else to do he digs them, and then perhaps complains of them for being of bad character. Any other crop would be as bad or worse if treated in a similar manner. Potatoes are not unfrequently left in the ground several weeks after being ripe, as though they were dead stones and undamagable, instead of living, perishable organisms, subject to all the conditions, transformations, and diseases that pertain to all vital structures. It is seldom that potatoes are not more or less damaged by neglect to harvest at the

proper time, or by improper management in harvesting, however well they may have been raised and matured. When the tops of potato plants wither the tubers are ripe, and, like other crops, will be injured if not at once gathered and taken care of. If allowed to be once soaked in the ground by a severe or prolonged rain after ripening, they lose irreparably some degree of their sweet flavor and some portion of their nutrient properties; nor are they so sound and vital for seed potatoes; and every rain augments the damage, rendering them both less palatable and less wholesome. What farmer can be ignorant of the fact that the potatoes he digs in November and December are less dry and sweet than those he ate from the same field in September and October previously? Potatoes should not be exposed to the air, sun, or wind to dry them, as is customary after being dug. If moist or dirty when taken from the ground, cleaning and drying does not protect them, but the reverse. Every potato that becomes uncovered before it is ripe, or which protrudes above its earthy covering, soon becomes blighted in the exposed part—a fact which proves that it is defenseless against aerial elements, and its need when dug of immediate protection.

Cultivation by Steam.

Mr. O. E. Lawrence, of Magnolia Plantation, parish of Plaquemine, Louisiana, responds to a request from the Agricultural Department for a statement of the results of his trial of the steam-plow, as follows:

Two hundred and twenty acres of my cane crop, one hundred and forty acres of which were plant canes, and eighty acres first-year ratoons, were, I believe, as thoroughly plowed and cultivated by steam as could be desired. The plant canes were grown upon land which, after yielding a crop of corn, was again broken up by the steam-plow, twenty-six inches deep; then, during the winter, laid off in rows fully eight feet apart and eight inches deep. In the month of February, the cane was planted and covered carefully with a hoe. I avoided carting the seed cane for plants upon the land, carrying it in from each headland by hand. The seed was good, and was planted in the usual way by laying down three canes in each row. It came up well, giving a perfect stand. In the months of April and May, when the plant cane was about eighteen inches high, I subsoiled the crop with my five-tined *steam cultivator* twenty-six inches deep, twice between each row, working over about ten acres each day. It left the land thoroughly loose and pulverized, and elevated about six inches above the level before sub-soiling. This, as the canes began to shade it, was clean and free from grass, and thus was obviated the necessity of giving them at this period of the season any more work, which in ordinary cultivation is always requisite. The cane continued to grow with great rapidity, and on the 10th of June, when it was large enough, and the ground suf-

ficiently settled to bear up the mule-teams, I gave it a thorough plowing with our two-mule plows, following with the hoes, billing and laying it by. Thus the entire crop, with the exception of this last working, was *cultivated and made by steam*.

On the 1st of September these canes were blown down very flat, from which they only partially rose. They cut for the mill, when rolled in December and January, from 7 to 12 feet in length, and this after being frosted so that we had to throw away the first two joints.

The juice weighed but $6\frac{1}{2}$ to 7 degrees Beaume; but under the circumstances the yield was over 3,000 pounds of double-refined sugar to the acre, and had the canes stood up until cut for the mill, and been as ripe as our canes usually are, I feel satisfied they would have produced over two tons to the acre, and this upon old heavy clay land.

The eighty acres of first year ratoons grown from the stubbles of the *steam-plowed cane*, planted in a similar manner last year, were barred off and well dug in the month of March, then subsoiled and cultivated by steam precisely as the plant-canecan. The yield was over 2,500 pounds of sugar to the acre.

Deep steam-plowing upon well ditched lands, I have always believed, would result in an average yield of over 2,000 pounds of sugar to the acre, but this was when I only expected to use the steam-plow in the breaking up of the lands. The use of steam for deep subsoiling in the cultivation of the canes, I confess, has far exceeded my expectations, and I am fully convinced that an average yield of even much more will be realized, and this too with less than half the labor now employed under the old system, in which the average yield is not over 1,000 pounds of sugar to the acre. To this may be added the complete preservation of our stubble canes against the cold and winter rains, so often disastrous to our ratoons.

The advantages of deep plowing and subsoiling by steam over the ordinary cultivation by horses, and the consequent trampling and packing of the ground, can hardly be overestimated. It enables the land to absorb the heavy rains and prepares it for the free admission of air and heat, and thus changes entirely the character of our soils—rendering the heavy clay lands productive and easily worked in seasons of drought, which we are so often subjected to. The crops grown upon deeply-plowed lands sustain no injury. This has been constantly my experience; in fact the steam-plow seems to command the seasons, enabling the soil at all times to retain and transmit moisture, upon which fertility mainly depends. But I fear the prospect at present is not very bright for the extension of steam cultivation in our State. A long war, with the breaking up of the most of our large plantations, the entire destruction of our labor system, followed by scarcity, inefficiency, and high price of labor, and this by a succession of bad seasons, together with enormous taxation, has to a great extent disheartened our planters and paralyzed

their energies; and though they have made almost superhuman efforts to restore their estates, yet to-day we have to witness, lamentable as it is, this once great and prosperous interest almost in its last throes of existence. Many of our finest plantations are now abandoned, and offered for sale without purchasers at less than half the cost of the improvements.

Deep plowing; less land cultivated, and that done much better; the introduction of steam-plows and the lands plowed by contract (where the proprietors do not choose to purchase), as is now done with eminent success in England and other countries, and a check to our excessive taxation, would soon restore us. With this every suitable effort should be made and inducements held out with a view to bring to our fertile lands and genial climate, so rich in promise, the enterprising and intelligent emigrant of every nation. Then, as the future surely indicates, will come a division of our lands with the division of our system of labor. The large and costly sugar-houses will be employed as central factories; capital and labor will blend harmoniously together, and, I trust, a new era will dawn upon our now depressed and struggling people.

In justice to the eminent inventors and manufacturers of the double engine steam-plowing tackle and implements, John Fowler & Co., of Leeds, England, I can only say, after three years' experience with two complete sets of their tackle, that the ease and facility with which they are handled, their simple and perfect application of power, and the completeness in every way in which they are worked, entitle them to the high appreciation with which they are now regarded in every part of the civilized world. And I trust the genius of American inventors, which has been constantly but unfortunately directed to the construction of a traction-engine, moving like horses over the land, with the plows attached, which must continue to be a failure, will soon be convinced that the *double-engine* system, in which two engines upon opposite headlands, carrying the winding-drum and alternately paying out by single line of wire rope, pull the implement between them, is all that can be desired for the most perfect system of *steam cultivation*.

Necessity will soon compel us to take a "new departure." The constant increase of emigration and population in the grain-growing States of our country will soon demand a better cultivation and increased production. In England steam-plowing has increased the yield of wheat from sixteen bushels to twenty-eight bushels to the acre.

I do not believe the agricultural interest of our country can much longer turn a deaf ear to this last and greatest achievement of steam—its successful application to the cultivation of the soil. It has broken the yoke, and lifted the burden which, for ages, held both man and beast in bondage, ameliorating their condition by making that which was most onerous, easy and attractive; it has elevated labor and dignified the plow.—*E. Lawrence, in Agricultural Report for September.*

Foundation of Successful Farming.

If I were obliged to fix on any one principle as the foundation of successful farming, I should take that of a *just proportion between the different departments of the farm organization*. Nothing is more common than to see, among those who are striving after improvements, a great want of balance between one part and another of their establishments. Farming is a composite business. It is like an army advancing on parallel roads, where the only chance of success lies in a simultaneous attack by all the columns. If one is forced in advance of the others, it is defeated for want of support; and the others in their turn are defeated for want of the help that it might have given—the army is "whipped in detail." There can be no success in farming, or at least no such success as we all should strive for, unless a true balance is kept up between land, labor, stock and management. He who adds a hundred acres to his farm without increasing the number of his hands, the amount of his stock, and his intelligence and attention in managing the business, probably does himself harm; if it is pasture-land that he buys, and if he uses it for summer stock, or if it be woodland, the case may be changed; but on general principles, if the farm is enlarged without an enlargement of working facilities, the work must be carried on at a disadvantage. Very often, indeed, a farmer wakes up to the idea that the key to all success is to be found in manure; and he devotes himself most energetically to its procurement, sending his men and teams to town to haul out night-soil at a season when they should be busy with plowing, planting, or cultivation. Manure he has, of course, and his land is made rich by it; but for want of proper care and management, the richness spends itself in the production of weeds instead of crops, and what would have been a source of great profit, with an addition of more men and more teams for home work, has been a losing business. Another may believe that his best chance for improvement lies in the employment of abundant labor; and he hires more men and teams than with his general facilities he can profitably employ, or more than he has the head to manage. Another, again, pins his faith to live stock of the finer breeds; and he buys expensive animals beyond his capacity for feeding and grooming. All of these men lose money, and all for the same reason. They give undue prominence to one branch of a business in which the growth of all the branches should be uniform.

I write this not from theory, but from experience. I have probably saved time by the course that has been pursued here, but had I known as much two years ago as I now do, I would have bought more manure to use immediately after draining the land, and would have had more labor to enable me to make use of the fertility, the drainage and manure would have given. I have maintained a pretty fair balance between the items of manure and labor, but by having more of both, I could have taken much earlier advantage of the capital invested in underdraining. Neither my experience nor

a general statement of the principle can be of direct value as a guide to any other farmer, but they ought to be most profitably suggestive to every man as he walks over his farm and makes his plans for future operations. For every load of manure, let there be suitable land allotted, and for this land, let there be due facilities for the most profitable cropping. If land is expensively underdrained, let it also be thoroughly manured and cultivated. If fine stock is bought, let good food be provided for it, and let it be well attended to. In short, let no part of the whole establishment fail to do its very best because some other part is defective. As soon try to ride a race with a lame-legged horse as to make your fortune by working a lame-legged farm. Every one of us is suffering to-day from this "want of balance;" let us all look sharp after the weak spots, and establish as much uniformity as we can, so that every dollar invested may bring its yearly ten cents of profit. If there is any better test of good farming than this, I have failed to discover it. In keeping up the *balance*, let us not forget our own heads, which are the most important part of the whole outfit. A good farm, with a bad manager, will "beat the dogs," at losing money. Ruskin says, "It is only by labor that thought can be made healthy, and only by thought that labor can be made happy"—let me add that no labor can be happy that does not *pay*.—*Ogden Farm Papers*.

Green Manures for Poor Lands.

Perhaps nothing in the whole province of farming engrosses so much the attention of those interested, as the question of preserving or increasing the fertility of the soil. There are several reasons for this, independent of the ever existing necessity for supplying farming land with the properties taken from it by unjust cultivation. They are, first, the great quantity of worn-out land, once fertile and productive, and made needful by the rapid growth of population, and the growing demand for the products of the farm; and, second, the soil of inferior quality brought into cultivation from year to year, by reason of the same necessity. Land that has been worked to death, and left to lie as waste, must be restored to fertility, and that which has never been productive must be made so, in order to become profitable. It is not so difficult to make worn-out and barren land produce good crops, as one would suppose from a hasty view of the innumerable failures to be seen all around. If the needful properties to grow crops are not in the soil, it is vain to sow, and plant, without first putting them there; or if they are there, but locked up, without first making the necessary conditions to release them, and give them vitality. Every observing farmer knows that it is far easier to produce grass than wheat, and a common remark among farmers is "if I can raise a crop of clover I am sure I can raise wheat." One of the means of raising land is to get it to produce clover, and plow it down when in full bloom. But clover contains a large percentage

of potash, and in soils already abundantly supplied with this, such as slate and shale lands, it is better to mix the clover with other grasses. Mixed grasses have all the fertilizing properties of barn-yard manure; and this furnishes a satisfactory reason why old meadows and sod fields yield so abundantly when farmed. Farmers know that an old sod field farmed in corn, yields the largest crops, and that the best crops of wheat are raised from it. Why? The field has been left lying until different kinds of grasses have grown up, each one gathering different substances from the atmosphere, and carrying them down into the soil through the roots, and enriching it. Hence when a crop of corn or wheat is planted all the substances necessary for its growth and perfect development have been provided for its use.

By the application of lime on such soil the decomposition of fibrous matter in the soil is hastened, and they are converted into plant food. If too much is applied, a heavy growth of straw is produced, and it will grow so rank as to lodge and yield very little grain. By using a smaller quantity of lime, so as to make a healthy growth of straw, the heads will fill well and the grain mature; for it is found that when the straw does not make an overgrowth the head generally fills perfectly. The object to be sought is to know what elements are needed in the soil, and in what conditions, to produce the crop we wish to grow. There is no doubt that if we should give to the soil all the constituents of the crop, each year, we could always count, with reasonable certainty, on a large yield. Were the constituent elements of wheat exhaustible in the soil, we might sow and reap, year after year, without diminution in the yield or quality. On the contrary they are easily exhausted, and, unless supplied, it is not long until we can raise no crop at all.

Wheat contains lime, soda and chlorine. Soda and chlorine make common salt. The sowing of common salt on wheat fields must be advantageous. It is believed to strengthen the straw and make it hard, thus preventing rust. Rust appears only on straw of a soft, luxuriant growth, which cracks open easily, leaving the juices to ooze out and escape. The action of the hot sun and moisture upon this, readily produces rust. Especially is this the case with wheat grown in low soil where the dampness is great.

The never-failing quantity of plant-food floating in the atmosphere is ever available for promoting the growth and development of plants. In its availability there is a marked difference between that in the air and the vegetable nutriment locked up in the soil. The atmosphere is sure to nourish growing plants whenever the tender leaves open their pores to take in the nourishment it furnishes. It builds up the stem and develops the various parts of the plant. Not so with the roots of the plant. It may send forth its rootlets in every direction, seeking food, and yet famish, droop and die, because the vegetable matter is not in an available condition to promote its growth. As it is

impossible for every farmer to get stable manure in sufficient quantity to enrich his land, he must look to the green vegetable manure supplied by nature. It is the principal source of manure on the earth, and as such it must be applied by the farmer if he would secure his own greatest advancement. By green manures is, of course, meant vegetable manures plowed down. By this method the soil will receive all, and more than is taken from it, for it receives in addition the accumulated properties generated by light, air, heat and water, which are inexhaustible in nature, and cost nothing. Observing farmers are well aware that green manures fructify the soil, and that it pays best to plow down clover, mixed grasses, oats, buckwheat and sowed corn. They should not fear to lose a crop of hay, or miss a crop of oats, or rye, or buckwheat by so doing, for the sacrifice of one crop will enable them to raise half a dozen crops with profit. Every few years green crops should be plowed down, in the absence of abundance of barnyard manure. It will keep up the fertility of the soil, as nothing else will, and enriches him who does it as well as his land.—*Exchange.*

Scientific Department.

Plant-Food.

If we make chemical examination of wheat we find that what we are able, after moistening, to rub off from the kernels with a coarse towel is made up of woody fiber, and differs but little from the dry straw of the plant. The next wrapper, which is a continuous one, contains the most important constituents of the seed, holding the phosphate salts and the nitrogenous ingredients. Here are stored up the little atoms of phosphate of lime, magnesia, soda, and potassa, which the microscopic mouths of the root fibers have sucked from the soil in which it grew. The office of the plant has been one simply of transference; it has transferred from the soil the earthy particles—lifted them from their low estate to the highest within its power to attain—placed them in position to meet the requirements of men and animals. Now, can the plant grow and the seeds mature unless the soil contains these salts? It may grow, and even luxuriantly; but shrivelled and imperfect seeds, few in number, will occupy the little pockets in the head, where, under the nourishing influence of a properly-adjusted soil, the grains would round out with that plumpness that causeth the husbandman to rejoice.

It follows, then, that phosphoric acid is needful for the proper development of wheat seeds, and moreover, as the gluten which holds the salts is rich in nitrogen, that element is essential to its growth. These truths are a part of those which chemistry reveals to us respecting the constitution of the wheat berry. New England soils are deficient in these elements. Lime and the phosphates were never stored up in them in abundance, and through the successive croppings carried on by our fathers,

men and animals have absorbed into their bony frameworks the little which had accumulated during the ages. The inference which seems to follow from these considerations is, that we have only to supply soil deficiencies, sow our wheat, and casting aside all doubt and anxiety, patiently await the abundant harvest.

And why should we not do this? Have we not solved all necessary problems? Have we not learned by analysis what food is wanted, and have we not furnished it? Have we not learned precisely the constitution of the vegetable structure and its seeds? Do we not understand the nature of its appetite, and how it must be fed? Certainly we do. Why then should we meet with failures? Because we cannot bring under control all the conditions of vegetable growth. We could better command success were there no uncontrollable influences to be taken into account. The chemist cannot order meteorological agencies. He finds in his examination of plants that they contain an abundance of water, and he also learns that vast quantities are constantly being exhaled during growth, and still another most important fact stands out for recognition: the food he supplies must be soluble in water, and, by its agency, voyaged through the microscopic canals to its appropriate resting place. Water, then, is needful for perfect development of plants and seeds. Heat also must be supplied. The clouds must let drop the rain, and solar rays supply the diffusive warmth, else the husbandman returns from his harvests in sorrow, and science fails to aid him. Let us not unjustly condemn its teachings, because it is unable to control the caprices of the seasons.

It is seldom, however, that crops utterly fail from the withholding of heat and moisture. Our fields are lean because of starvation, because we do not supply through the soil the food which plants require.

Chemistry teaches what had already been learned from observation and experience, that in feeding vegetable growths the kind of aliment demanded differs in different organisms. There are certain great families of plants which have diversified appetites, and they must be gratified in their tastes or they refuse to bring forth their like. We know what they require, and we obtain hints as regards the best method of supplying their wants.—*Boston Journal of Chemistry.*

The New Art in Photography.

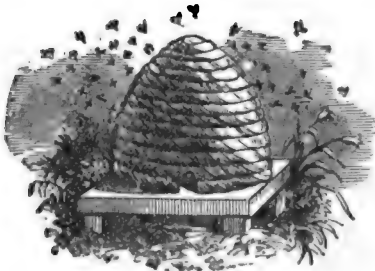
The new method in photography, called the gelatine process, by which photograph-printing is rendered independent of the sun's direct assistance—a thousand copies being struck off by the use of ordinary printer's ink in the time occupied in executing a few dozen by means of sun-printing—has proved a wonderful success, and bids fair to supersede lithography and in many cases steel engraving. This improved process has just been brought to a state of great perfection by M. Albert, of Munich, Bavaria, who has made it possible to print several thousand impressions from the same plate, and at a comparatively small cost. A

description of this method, in its various chemical and mechanical details, would occupy much space. Suffice it to say that by means of it, pictures from the cheaply-produced gelatine plates can be printed at a cost not exceeding that of an ordinary lithograph. In printing, a common lithographic press is used, and the operation is the same as in the production of lithographs; indeed, the pictures combine the qualities of the lithograph with the delicacy of the steel engraving and the accuracy of the photograph.

Cleanliness Essential to Health.

It is said by eminent scientific men that the "decomposition of a single potato or wilted turnip will breed disease if the vapors of the decaying substance are confined to the walls of a house." The same is said of decaying substances in alleys, streets and yards. The vapors arising from manure and rubbish piles will so impregnate the atmosphere as to make it unhealthy, and thereby spread disease and death. This is the cause of so many diseases breaking out that baffle the skill of physicians. Filthiness causes destruction wherever it exists.

The Apiary.



Management of Bees.

When taking honey to market let the boxes ride bottom upward, as there is less danger of breaking the combs. Weak colonies may be strengthened or new ones formed by taking up light stocks for neighbors.

Our best apiarians all agree upon one thing, which is, that bees will store more honey in the body of the hive than they will in top boxes. For this reason, and the advantages in supplying needy stocks for winter, we prefer to have a part of the surplus stored in frames. Whenever honey is taken from the hives, it should be set into boxes or hives, and taken to a dark room and kept until fall, when some may be needed in preparing stocks for winter. Some should also be kept on hand for emergencies, and the rest may be sold or used in making new colonies with bees obtained by taking up light stocks for neighbors.

There are enough in almost any community who are so far behind the age as to hive their late swarms in box hives without uniting them. These and other light stocks they brimstone in

the fall, *unless* they can get the "bee man" to take them up for the bees. Every bee-keeper whose apiary is not fully stocked, and all who wish to make the most money out of their surplus honey, should prepare to take as many such swarms as they can supply with frames of honey to winter upon. The process of taking up a swarm is nearly the same as for transferring. Have a small box with a hole in each side covered with wire-cloth for ventilation. As each comb is taken out brush the bees to the entrance of the box, and when all are in close it up. As it does not pay to winter small swarms, we usually put two or more together, and if no queens were removed all but one will be killed. The empty combs are valuable to use in honey boxes and frames in the body of the hive, and may be purchased at the market price of bees-wax. Fasten them into frames with melted rosin, and use them to fill out the hives after giving each swarm four or five combs of honey. If this be not done the space should be contracted by inserting a partition board or a frame with a cloth tacked upon it. Each swarm should also have some bee-bread, which may be got by exchanging with old stocks.

FEEDING BEES.—If it is desired to winter light stocks, and *all* the honey, either in frames or boxes, has been *imprudently* used or sold, the best feed that can be given them is strained honey, by pouring it into the combs, or allowing them to take it from shallow pans placed in the chamber of the hive. The feeding should be done early in October, that the cells may be sealed over, as far as possible, before cold weather, for unsealed liquid absorbs impurities, dampens the air within the hive, and thus renders the bees unhealthy.

Profitable Business for Women.

One of the most profitable as well as interesting kinds of business for a woman is the care of bees. In a recent agricultural report it is stated that one lady bought four hives for ten dollars, and in five years she was offered one thousand five hundred dollars for her stock, and refused it as not enough. In addition to this increase of her capital, in one of these five years she sold twenty-two hives and four hundred and twenty pounds of honey. It is also stated that in five years one man, from six colonies of bees to start with, cleared eight thousand pounds of honey and one hundred and fifty-four colonies.

When properly instructed, almost any woman in the city, as easily as in the country, can manage bees, and make more profit than in any other method demanding so little time and labor. But in the modes ordinarily practiced, few can make any great profit in this employment.

It is hoped a time is at hand when every woman will be trained to some employment by which she can secure to herself an independent home and means to support a family, in case she does not marry, or is left a widow, with herself and family to support.—*American Woman's Home.*



The Stock Yard.

Feeding Stock.

EXPERIMENTS.—COOKED FOOD FOR SWINE.

Two experiments were made in feeding corn to five half-blood Berkshire pigs of the same litter, the first experiment being with old corn shelled and fed in three different forms, viz.: fed whole; ground and made into a slop with cold water; ground and boiled and fed cold. The result of this experiment was that five bushels of whole corn made forty-seven and three-fourths pounds of pork; five bushels of corn, less miller's toll, ground and made into thick slop with cold water, made fifty-eight and a half pounds of pork; and the same amount of meal well boiled and fed cold made eighty-three and a half pounds of pork. In each case the food was administered regularly and without waste, and other precautions were taken to secure fairness of comparison. With the whole corn kitchen slops were given, without milk; and of the boiled meal one or two quarts were thinned with cold water or house slops, for drink. The corn was estimated at \$1 30 per bushel and the pork at \$14 per hundred-weight. In the case where the whole corn was fed, the price of the corn equaled the value of the pork. The same amount of corn ground, cooked, and fed cold, returned the price of the corn, and one dollar per bushel in addition.

The second experiment was with vubbins, or soft new corn, fed in two forms, viz.: on the ear; and shelled, ground, and boiled.

Ten bushels of corn on the cob, fed on the ground, made twenty-nine and a half pounds of pork. Corn shelled from the same amount of ears, and then ground by horse-power and well boiled, made sixty-four pounds of pork. The pork made from cooked food was as firm as that made from uncooked. In supplement to these experiments the narrator states that, under circumstances apparently equivalent to those above reported, three bushels of meal with five bushels of potatoes, cooked, made seventy-two and a half pounds of pork, and ten bushels of corn on the ear, ground and boiled, made seventy-one pounds. From his experiments he draws the conclusion that it is more economical to allow food to become cold before it is fed out, and that in this state a

larger amount will be eaten and with a better appetite.

ANOTHER EXPERIMENT.

The following is a summary of an experiment by W. F. Baggerly, of Wayne county, New York, in feeding four pure-bred Chester White pigs, littered March 31, 1868. The pigs were kept in a thrifty condition until October 24, when Mr. Baggerly commenced feeding to them as much shelled corn as they would consume, amounting in quantity to one bushel per day for the four animals. The result as exhibited for the week ending November 6, was an average daily gain of nine pounds on the weight of the pigs. The value of this increase is stated to be twelve cents per pound, and the shelled corn thus returned a value of \$1 08 per bushel. During the eleven days following, cooked Indian meal was fed, at the rate of three-fourths of a bushel per day. The result was an average gain in total weight of eleven pounds daily, making the cooked meal return a value of \$1 65 per bushel. The food was then changed to cooked potatoes and meal, in the proportion of four bushels of potatoes to one of meal; the meal being stirred in after the potatoes were cooked. The result of eight days' trial was an average consumption per day of one and a quarter bushels of the mixture, and an average total gain in weight per day of nine and three-quarter pounds, each bushel of the potato and meal mixture returning a value of ninety cents. Although the experimenter draws conclusions in favor of such a mixture of potatoes and meal as a principal food, examination of the results will not justify this preference over the cooked meal, except in localities where the money value of potatoes is in very low ratio to that of corn.

EXPERIMENT WITH PART COOKED FOOD.

W. Arey, of Hampden, Maine, communicates to the Department an experiment made in feeding three pigs littered in June 1867. He commenced his daily course of feeding by giving each pig one or two gills of raw meal mixed with a sufficient quantity of milk to wet thoroughly, to which was added about a half pint of milk three times a day, with a few potatoes boiled. The potatoes were fed until the pigs were about four months old, the particular purpose of which was the sufficient development of stomach. During the next

two months three pints of raw meal with about four quarts of milk were given per day, a few boiled potatoes being occasionally added. At the close of this period of six months, December 12, 1867, the three pigs weighed, respectively, 162 pounds, 162 pounds, and 125 pounds. After this date each pig received two quarts of meal with four quarts of milk or water per day, until fattening commenced, when each received one quart of meal with one quart of drink three times a day. When killed, February 26, 1868, the pigs weighed, respectively, 249 pounds, 246 pounds and 209 pounds; the respective gains being 87 pounds, 84 pounds, and 84 pounds, making a total gain of 255 pounds. The whole amount of corn meal fed out varied but little from 17 bushels. No valuation was put on the milk and potatoes, the former being accounted as slops, and of the latter only a small quantity was used. Mr. Baggerly has followed this course of feeding for several years with different varieties of swine, and finds that by this treatment he can safely calculate on obtaining the above average of fifteen pounds of pork for each bushel of corn. His experience demonstrates that over-feeding is a common error, and that the practice of giving swill and house slops in liberal quantities tends to produce an undue development of the stomach, and an unnatural craving for a greater amount of substantial food than can be properly utilized in growth; thus causing waste of food, and preventing the profit which might otherwise be obtained.—*Agricultural Report.*

Carrots for Horses.

Practical experience has demonstrated beyond a doubt that horses are benefitted by liberal root feeding. The action of this kind of diet upon the animal is to keep his digestive organs in a healthful condition. There are those who do not hesitate to assert that a bushel of carrots is equal to two bushel of oats for a horse. Now, while my own experience has fully satisfied me of the great value of carrots for horse food, and especially for the patient livery-stable horses that are kept on dry food the whole year round, I am not prepared to place quite so high an estimate upon their value as that. That they do possess extraordinary medicinal qualities, none who have tried them will deny. An experience of not a few years has satisfied me that carrots fed to horses during the winter, and especially after the first of January, have a most beneficial effect upon them. They act, when not fed in excessive quantities, as a mild aperient, and appear to have the desirable effect of admirably fitting the animals for the hard work of the spring. I am now speaking of my farm horses.

For livery-stable keepers they would, it appears to me, possess a double value. Horses kept the year round in large cities, and especially livery-stable horses, rarely get a mouthful of green food. Dry hay and grain, without either grass or roots, is their daily and yearly food. I can very well imagine how grateful to

the poor beasts an occasional feed of roots must be, and how strongly humanity appeals for them. As carrots can be grown as cheaply as corn, and yield five times as many bushels to the acre, I cannot conceive of any good reason why they should not form a part of livery-stable provender.—*J. L. Peters, in the Journal of the Farm.*

Dry Earth for Bedding.

R. Giddings, of Illinois, saves the manure, and adds to the comfort of his stock by using dry earth in the stables. To do this he fills a stall or large bin in his stable during dry weather, with pulverized clay, road scrapings, or common soil. With this he covers the floor of each stall three inches deep, and then places the litter for the animals' bedding on it; by this means all the urine will be absorbed, and its wealth of nitrogen saved, and such is the absorbing power of dried earth, that one three-inch flooring will not be so thoroughly saturated in a long time as to require replacing. He says his experiment required but one bin of pulverized earth to absorb the urine of ten or twelve cattle during the stabling season; and that two men with a team filled the bin in one day. One ton of the saturated earth is worth more than the same weight of even fresh-saved dung. The aggregate amount of plant food thus saved from the stalls is fully double, and in much better condition for use.

Why do Animals Need Salt?

Prof. James E. Johnson, of Scotland, says that half the saline matter of the blood (75 per cent.) consists of common salt, and as this is partly dissolved every day through the skin and kidneys, the necessity of continued supplies of it to the healthy body is sufficiently obvious. The bile also contains soda (one of the ingredients of salt) as a special and indispensable constituent, and so do all the cartilages of the body. Stint the supply of salt, and neither will the bile be able properly to assist digestion, nor the cartilages to be built up again as fast as they naturally waste. It is better to place salt where stock can have free access to it than to give it occasionally, in small quantities. They will help themselves to what they need, if allowed to do so at pleasure, otherwise when they become salt hungry, they may take more than is wholesome.

Somebody wrote to the editor of a paper to inquire how he would break an ox. The editor replied as follows: "If only one ox, a good way would be to hoist him, by means of a long chain attached to his tail, to the top of a pole forty feet from the ground. Then hoist him by a rope tied to his horns to another pole. Then descend on to his back a five ton pile-driver, and if that fails to break him, let him start a country newspaper and trust people for subscriptions. One of the two ways will do it."

The Poultry Yard.

For the Southern Farm and Home.

Fowl-Houses.

MR. EDITOR—I have tried various sorts of fowl-houses, and being fond of fine fowl and plenty of them, have gone to considerable expense in obtaining the choicest breeds, and in providing for their health and comfort. Though I am an advocate of many "modern improvements," I am satisfied that my fowl did better when they were "free to choose their place of rest"—when the sheds, cattle stables and trees in the farm-yard were their roosting places—and before my love of order and dread of thieves induced me to build a fowl-house according to the new ideas.

If we must have a fowl-house, let it be high—fully nine or ten feet from the ground to the comb of the roof. In a lofty house the air is purified by ventilation above the roosting-places, and the health of the fowl is thus uninjured.

The perches should not be more than two feet or thirty inches from the ground, stout pine poles skinned and split in half are the best, and the perches should be all the same height, and not one above another, like seats in a theater, as is generally the case. When the perches are several feet from the ground, the fowl frequently become lame by the violence of their fall in flying down in the morning. Fowl ladders do not provide a remedy, because, while fowl will soon learn to ascend on them to the perch, they never use them to descend.

Ventilation is essential to health, and the ventilators should be kept open in fair weather, closed only when it is very severe. Cleansing every day or two and frequent whitewashing are also necessary.

I have found an earthen floor, smooth and firm, covered with about two or three inches of loose sand, to be the best.

If there be plenty of space, and material and expense be no object, I would recommend that the house be divided into three chambers or divisions, one for roosting, one for laying, with laying boxes on the floor and against the sides of the house, and one for setting hens.

Laying and setting hens should never be allowed to occupy the same room, and no ducks, geese, turkeys, or guineas should ever be permitted to associate with the chickens in the same roosting-place.

Cleanliness, ventilation, fresh water, a dry run, and plenty of ashes or sand are essential to the health of fowl.

In future numbers, if you permit, I will detail my experience of fancy breeds, and in buying choice eggs in Pennsylvania to be hatched in Georgia.

COCKALORUM.

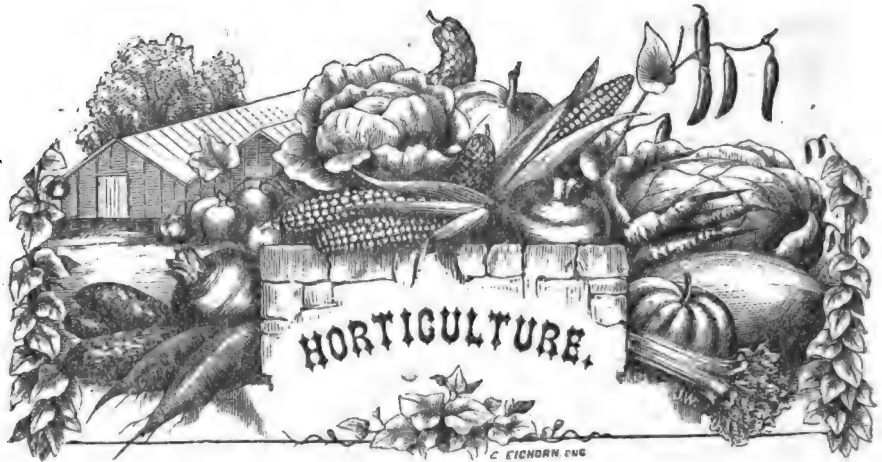
Green Food for Fowls.

Mr. L. Wright, in his new serial work on poultry, has these observations on green food, which are of great importance to all who attempt to breed fowls in confined quarters:

The last requisite in the shape of diet is a regular supply of green food. Here, again, fowls kept on grass will need no attention; but for birds penned up, the daily provision of it is an absolute necessity, though most beginners are ignorant of it. We well remember, in our own early experience, how our fowls died, we could not, at first, tell why; and one fine Buff Cochinchina cock, whose only fault was a strong vulture-hock, was, in particular, greatly regretted. An experienced friend let us into the secret, and after that we had no difficulty in keeping fowls, even where it is often said they cannot be kept in health, viz.: in a yard paved with large flag-stones. The best substitute for natural grass is a large fresh turf thrown in daily to each four or five hens; and even in towns it is often possible to procure this, by giving children a few pence every week to keep up a regular supply. Where turf is not allowed to be taken, grass may be cut or pulled, but in this case must be cut into green chaff with shears or a chaff machine. The latter plan is how we actually managed for years in a yard only sixty-seven by thirty-five feet, divided into six pens; paying some child a few pence to bring fresh-cut grass daily, cutting it up and mixing it with their soft meat.

CHICKEN CHOLERA.—The symptoms of this disease are a high fever, feathers ruffled, the skin turns black, the eyes are closed, and the patient will not move unless driven. Death usually takes place in about three hours. I have lost about 100 chickens this winter, besides turkeys, ducks and geese. I tried all the remedies I could hear of, but without effect, until the following came to my notice: Take corn meal and shorts in equal parts, wet the compound, and mix with lime as strong as they will eat it. For turkeys, geese and ducks, corn soaked in lime water will effect a cure.—*Cor. Rural Am.*

THE most extraordinary instance of patience on record is that of an American judge, who listened silently for two days while a couple of wordy lawyers contended about the construction of an act of the Legislature, and then ended the controversy by quietly remarking: "Gentlemen, the law is repealed."



The Vegetable Garden.

Many people think that because there are but few seeds to be sown in the garden this month, there is nothing to be done. This is a great mistake. You must prepare now for the active work of the spring. Now is the time to haul out, spread and turn under the stable manure which is to make the next crop. Be generous in the quantity you apply. Do not try to make a few loads, or maybe wheelbarrowsful do for the entire garden. If you want early, tender and succulent vegetables, you must sow the seed in very rich ground. It can hardly be too rich. Vegetables are rapid growers and consequently are greedy feeders. If you starve them they will starve you, but if you feed them liberally they will repay you bountifully. Plow, spade or fork over all the beds. Do not cover the manure too deep. If the soil of the garden is too sandy, haul clay, spread it evenly and mix thoroughly with the sand, and if the clay predominates, add sand.

Onions may be planted this month, and in the more southern portions of our country, where the frosts are rarely severe, peas, lettuce, etc., may be sown successfully.

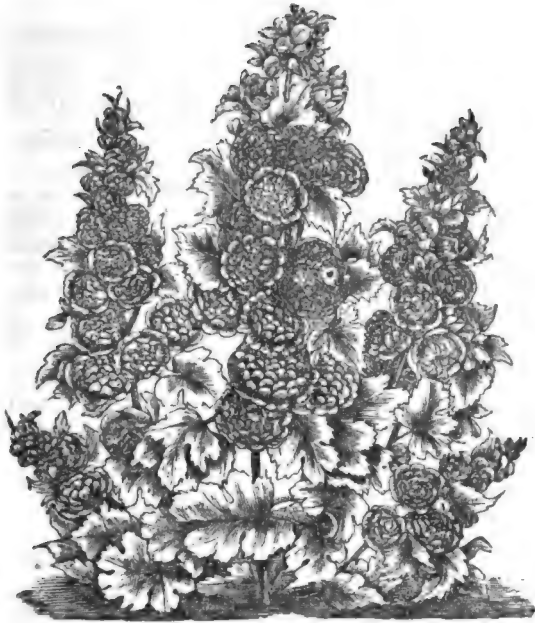
With a little trouble an ample supply of salad may be had during the winter in any part of the cotton States. Prepare a piece of ground with a sunny exposure, by forking in a very thick dressing of rich stable manure, making what is known as a "slow hot-bed." Sow the seed, and in very cold weather cover with straw or boards, and you can have a very agreeable addition to "turnip greens." If the asparagus bed has been neglected during the past month, dress it heavily with coarse stable manure.

We publish in another column an admirable article on the culture of asparagus, written by P. T. Quinn, the well known horticulturist. It will be found of great value to those who are about to establish an asparagus bed in their gardens. Too many of our Southern farmers skip over our monthly instructions in this department of the *FARM AND HOME*, because they have no respectable garden, and think that they have no time to spare to make one. A few rows of Irish potatoes, a bed of spindling "collards," some cabbage, Snap beans, and now and then a few tomatoes are the only vegetables ever raised on the farm, and this in a country where every vegetable known to horticulture may be grown in abundance and of the finest quality! This is a shame and reproach which we ought to remove as quickly as possible. Health and economy as well as comfort demand that we should supply ourselves and our families, with plenty of fresh vegetables. No part of the farm will pay one third the profit to be derived from a well-tilled vegetable garden.

The Flower Garden.

November is the month to lay the foundation of the flower garden for next year, by working the soil, dressing, manuring, pruning, and setting in order. Do not wait for spring. Trees, plants and shrubs, set out now will far surpass those planted in spring, both in early blooming and in degree of beauty.

Trim the roses, stir the soil round the roots, dress with woods-earth and ashes, or charcoal. Plant cuttings of choice varieties, for a rose established on its own roots is worth much



DOUBLE SINNIA.

more than those that are grafted or budded. Plant out all flowering bulbs without delay. They will give you a joyful greeting in the early spring.

Sow the seeds of the most hardy annuals and perennials. They will come up early in the spring, and reward you for your trouble with their variegated beauty and their fragrance.

Do not neglect the flower yard or think of flowers as "foolishness." Have a small space at least round your dwellings, where the power of beauty and not the power of Mammon exercises its influence, and where you and your family and your friends may find rest and relaxation from the toils and anxieties of life in the contemplation of the beauties of nature. It costs but little labor and expense to have a few shrubs and flowers around our houses. We have rarely seen a farm, the owner of which talked of flowers as "foolishness," and allowed the hogs and calves and chickens to roam at large in the space that ought to have been a flower yard, that was not untidily and badly managed, and *vice versa*, we have rarely seen one with a neat, cleanly and well-kept flower garden, that was not well managed, and where thrift, comfort and contentment were not to be seen both without and within the farmer's home.

The Orchard.

Of all the months in the year to plant fruit trees in the South, November is in our opinion the best. Let those who have no orchard plant one immediately, buying the best trees from the best nurserymen at the South, avoiding tree peddlers as they would the plague, and let those who have orchards increase their size, remove all old and unprofitable trees, supplying their places by those that are young and good, and give more attention to the culture, pruning and general management of their fruit trees. Cut away all diseased and dead limbs; hunt for and destroy all noxious insects. If pruning has been neglected in the summer, attend to it now.

A good orchard, well managed, anywhere within easy reach of railroad or steamboat communication, will yield a revenue of at least from \$10 to \$15 per tree, and we have seen pear trees yield upward of \$50 per tree. Think of this ye "all cotton" men.

For the Southern Farm and Home.

Strawberry Culture.

MR. EDITOR—I happened to be at the bookstore of Messrs. Boyle & Chapman a short time ago, and saw on one side a beautiful photograph of an exquisite picture—"The Strawberry Girl," and on the other a large pile of

the FARM AND HOME, fresh from the hands of the printer, and on the way to the mailing clerk. The association of ideas made me think how little attention our people generally pay to strawberries—how easily they are raised—what a comfort they are, and how profitable they may be made, and then I thought that perhaps you might allow me to give to the public, through the FARM AND HOME, a little of "what I know about" strawberries. This looks very utilitarian and prosaic, but is not everything nowadays judged by the one test, "will it pay?"

I am passionately fond of strawberries, believing them to be the most delicious fruit there is. I am surprised that so few people at the South engage in their culture, because it is now demonstrated beyond a question that strawberries can be raised in the Southern States quite as successfully as at the North or in Europe, and that if properly cultivated, they will yield a supply of fruit during six months of the year. The best soil for strawberries is a sandy loam. If the beds can be located near to a running stream, whence a constant supply of water can be had, as moisture is an indispensable necessity, so much the better. The best time to plant is now, when the weather is cool and moist. Plant in rows two and a half feet apart. Never dress with stable manure or animal manure of any kind. Woods-earth and ashes are the best possible fertilizers, as they contain just what the fruit wants. Never allow a plant to run. Keep the beds clear of all grass and weeds. Mulch the beds thickly with leaves or pine straw. During the fruiting season, keep them constantly watered by an engine or watering pot, in the absence of rain. Let no tree, plant or shrub grow near enough to the strawberries to extract any of the moisture from the ground they occupy. If the beds be properly situated, well planted, kept clean, runners prevented, well mulched, and copiously watered while in bloom and fruit, they will yield a succession of fruit for six months in the year in any Southern State. My favorite varieties are the Wilson Albany, and the *Triomphe de Gand*, and in the order in which I have named them. I have spent a good deal of money and time experimenting with a number of "seedlings" with high sounding titles, which were said to possess wondrous properties, but I found them all inferior to the Wilson.

SUBSCRIBER.

Memphis, October, 1872.

For the Southern Farm and Home.

Origin and Definition of the Technical Names of Flowers.

FOR THE BENEFIT OF THE LADIES.

PART II.

BY DR. SILAS T. GILBERT.

Quamoclit, *feather leaves*. Ranunculus, *a little frog*. Reseda, *to appease*. Mignonette, *little darling*. Ricinus, *a forest tick*. Rudbeckia, *Olaus Rudbeck*. Sabbatia, *Prof. Sabbati*. Salpiglossis, *trumpet tongued*. Salvia, *healing*. Sanguinaria, *blood colored*. Sarracenia, *Dr. Sarrazin*. Saxifraga, *rock breaker*. Scabiosa, *scabies*, supposed to cure eruptions on the skin. Schizanthus, *numerously divided flower*. Sedum, *sitting* (apparently on the bare rock). Senecio, *hoary*. Silene, *viscid* (secretion). Solidago, *uniting or healing*. Specularia, *speculum*. Spirea, *enwreathing*. Symphitum, *growing together*. Tagetes, *god of gold*. Thunbergia, *Prof. Thunberg*. Tiarella, *little tiara*. Tigridia, *tiger-like*. Tradescantia, *John Tradescant*. Trillium, *triple*. Tritoma, *divided into three*. Tropeolum, *a trophy, or helmet and shield*. Trollius, *round*. Tulipa, *brilliant*. Valeriana, *efficacious*, (medicinally). Verbascum, *bearded*. Verbena, *sacred herb*. Whitlavia, *Fred. Whitlaw*. Xeranthenum, *dry flower*. Yucca, *thread*. Zauschneria, *Prof. Zauschner*. Zinnia, *J. G. Zinn*.

FLOWERING SHRUBS, ETC.

Amorpha, *formless*. Ampelopsis, *vine-like*. Amygdalus, *almond*. Andromeda, *see mythology*; it grows in foul ponds. Azalea, *arid*, a misnomer indeed. Buxus, *box*. Calycanthus, *cup-flower*. Chionanthus, *snow flower*. Colutea, *sounding*. Coronilla, *little crown*. Cornus, *horn-like*. Crategus, *strong*. Cydonia, *the city of Cydon*. Daphne, *see mythology*. Deutzia, *John Deutz*. Diervilla, *Dierville*. Dirca, *name of a certain fountain—see mythology*. Euonymus, *the mother of the furies by Saturn—flaming bush*. Halesia, *Dr. Hale*. Hedera, *cord-like*. Indigofera, *indigo-like*. Jasminum, *Arabic ysmyn*, *bride-like*. Kalmia, *Peter Kalm*. Kerria, *Prof. Kerr*. Lavendula, *bath-scenting*; *to wash*. Lippia, *A. Lippi*. Lonicera, *Adam Lonicer*. Lycium, *Lycia*—see ancient history. Magnolia, *Magnol*, the French botanist. Philadelphus, *so called by Nuttall, of Philadelphia*. Rhododendron, *rose tree*. Rhodora, *rose-like*. Ribes, *sour*. Robinia, *Jean Robin*. Rubus, *red*. Sambucus, *flute*. Shepherdia, *Thomas Shepherd*. Spartium, *cordage*. Syringa, *pyramid*.

flower. *Tamarix*, the *Tamarisci* people. *Tecoma*, *trumpet* or *horn*. *Wistaria*, *Dr. Caspar Wistar*.

The names from which are derived our modifications—rose, lily, etc., are of classical origin; but their ultimate definitions are lost in antiquity.

Sinensis, from *Sina*, the native term, means relating to or coming from China. The Japanese call their country *Nipon*, which the Dutch corrupted into *Yapan*. From this comes our term *Japan*, and which, when Latinized, has been distorted into *Japonica*. So all flowers, etc., having this word attached to their names, are supposed to be of Niponese origin. The meaning of such phrases as *Africanus*, *Egyptus*, etc., is self-evident.

For the Southern Farm and Home.

The Snake Cucumber; Trophy Tomato; Strawberry Watermelon; Japan Pea.

MR. EDITOR—I have to trespass on your columns in behalf of a few things that are comparatively little known. The first is that useful novelty—the snake cucumber. I procured a package of this seed last spring. The number of seeds in the paper was exactly twenty-seven, which I planted in nine hills. They all came up in due time, and when about a foot high I stuck three good pieces of brush around each hill. They grew about two feet before showing any signs of fruit, but when they commenced they beat anything of the kind that I ever saw. They put out a large quantity of young green snakes, as perfect reptiles in every appearance but life as ever were seen. There was one hill that I gave a little extra attention to, and one cucumber on that hill measured four feet two inches, that is fourteen inches longer than any that I ever heard of. His snakeship was straight and as flexible as India rubber. I exhibited his snakeship in the drug store of Dr. Bussey of this town, and he kept good for one week, scaring ladies and children out of a year's growth. I did not let this one touch the ground, as they begin to coil in all shapes as soon as they do, but they will run straight if not permitted to touch it. This cucumber is well worthy of cultivation, both as a curiosity and for the table, as it is of a finer flavor than the common kinds. It would also make a delicate pickle if cut into short joints.

There is another valuable acquisition to the tomato family, the "Trophy." It is decidedly the finest tomato I ever saw. It was late in

the season when I got the seed, but I was bound to give it a trial. Although my large "early reds" were as large as a pullet's egg when I planted the trophy seed, they were only one week ahead of it, although, late as it was, I gathered many that would come close on two pounds weight. It is the largest, heaviest, solidest and best early tomato I ever saw. I think I can bring it up to three pounds next year. To keep this tomato pure where there are others planted close to them, they should be grown from cuttings cut off before frost, about six inches long, cut square at a joint, and planted in a box of sand prepared for the purpose. Keep from frost, and with a little heat and plenty of light they will take root quickly and make better plants than could be grown from the seed, and you need not fear a mixture when raised from cuttings, besides they make better plants and fruit.

There is another valuable acquisition, namely, the *Strawberry Watermelon*. It is one of the finest, sweetest and best-flavored melons that I ever saw. It grows about two feet long, of a very lively green color, small white seed and a rich rose-colored meat. It ought to be in every garden.

The last, but not the least, is the *Japan Pea*. This is a delightful upright-growing pea, of fine flavor and quality, and very simple in its cultivation. It requires no sticks, and is a tremendous bearer. It ought to be planted like cotton, only one stalk in a hill; the hills ought to be two by three feet, and work with plow and hoe, the same as cotton or corn. They grow two and a half feet in height, and will be covered from bottom to top with fine peas as large as the black-eye crowder. They are a late pea, and excellent for fall use, both for the table and stock. They deserve extensive cultivation, as they thrive in any land that will bring cotton or corn.

We had no rain for nearly three months till a few days ago, and grass and herbage were dried up. The cotton crop in this section is nearly gathered—there will not be over half a crop. The corn crop is very fine, as it was made before the drought set in. I have saved an abundance of the seeds of the Snake cucumber, Trophy tomato, Strawberry watermelon and Japan peas. Some I will sell and some I will give to friends. I warrant all to be genuine and true. I have a great many other things to talk about, but I fear I have trespassed too much on your valuable time and columns already.

Yours respectfully,
P. H. PARKER,
Gardener to Col. R. B. Todd, Bastrop, La.
Oct. 4, 1872.

For the Southern Farm and Home.

Double Working the Dwarf Pear.

MR. EDITOR—It has probably never occurred to the minds of amateurs and professional fruit growers that the pear can be *double worked* at one operation—that is, at the first grafting. You are well aware that there are several varieties of the pear that will not dwarf easily on the quince, unless double worked—that is, the pear that you want to dwarf has to be grafted on another pear dwarfed on the quince. The Flemish Beauty is one of these, and hard to dwarf on the quince. The operation is performed in this way: Take a scion of an easily dwarfed pear, such as the Bartlett, Seckel, or any other easily dwarfed variety, and graft on the upper end of it, the pear that is hard to dwarf. For instance, graft a scion of the Flemish Beauty on to the Bartlett, and then graft the Bartlett on the quince, and although there are two grafts, they will take, and grow as if there was but one, thus gaining a year by this operation. This is not the only advantage that I claim for this operation—there is still another. Such pears as the Rosteiyr, which grow straggling, if first grafted on the Seckel, and then the Seckel on the quince, will grow much more thrifty and compact, and make a handsomer dwarf than it would make grafted on the quince.

Now every one that is acquainted with the Seckel knows that it is very slow at first on the quince, and does not grow fast till it gets well established—that is, from two to three years. Now, if you graft a scion of the Seckel on a scion of the Bartlett, and then graft the Bartlett on the quince, your Seckel will grow much more rapidly than it would on the quince alone. By this method, I claim that a slow growing variety can be made to grow faster, and a straggling variety be made to grow compact at the same time. There should be but one bud left on the bottom scion, and that should be between the two grafts, and but one on the top scion, and that should be on the top. The wood should be cut close to the top eye. The operation may be performed and wrapped the same as if there was but one graft. I mean wrapping each graft separate. This is novel, but practical, as I have done it a great many times, and seldom failed to gain the desired effect. This is what I call double working at one operation—I mean at the same time. This originated with me twelve years ago, and I do not recollect that I ever made it public

before. It must be recollected when the scions begin to grow, that the eye which was left on the lower scion must be pinched off. Dix, Bose and Sheldon would dwarf easily and quickly by this method. I have finished all my budding. The stocks were bark bound, but I scraped away about three inches of the dirt, and I found the bark in fine condition for budding.

Yours respectfully,

P. H. PARKER,

Gardener to Col. R. B. Todd, Bastrop, La.
October, 1872.

How to Raise Asparagus.

For more than twenty years I have been accustomed to hear about the same class of questions asked by consumers, why it was that asparagus, a vegetable that was always in good demand, and usually commanding high prices, was not more generally cultivated by farmers, as well as gardeners, situated favorably, and accessible to good markets?

During these twenty years I have been engaged, more or less each year, in growing vegetables for market, and at different times have known each and every kind of vegetable grown to any extent for market to be a "drug," with the single exception of asparagus, which so far has always been in good demand, and that too at paying prices.

There are a few persons who have been engaged on an extensive scale in "trucking" who have not been compelled to sell, in "bad seasons," a part or the whole of a crop for less money than it cost to produce it. This would apply to the whole list of vegetables, leaving out asparagus, which during such dull seasons and poor markets is generally made use of by those who grow it to work off other kinds of vegetables, that is, in case a grocer wants two or more dozen of asparagus, to get it he would be obliged to buy a portion of whatever the grower had on his wagon at the time. In this way the gardener who had an abundance of asparagus would not lose so much in the sale of his crops in dull seasons as he who was not so situated.

Within the past few years more attention has been given to the culture of asparagus, and it is not rare now to find fields of from two to seven acres in different sections devoted to asparagus for New York and other large markets. Some of these new plantations have already begun to yield, and still prices are not in the least affected, but on the contrary have advanced. The past season growers estimated the yield was above an average one, and still prices ranged higher than they have for many years. This condition of matters is quite encouraging for those who have young beds, or are about to embark in this branch of gardening with a view to profit.

To be successful in the culture of asparagus for market, there are a few essential points to be fully considered and carried out before any hopes of success can be entertained.

The first is a selection of the most suitable soil and situation. The second a thorough mechanical preparation of the soil before planting, and third, heavy manuring.

The location of the bed is important, from the fact that when asparagus first comes into market, it sells briskly at from \$5 to \$8 per dozen bunches, and frequently as high as \$12 per dozen, if the spears are large and the bunches carefully made. From these prices it gradually falls, as the supply increases, until it reaches \$2 per dozen, and very seldom goes below this price, although at \$1.50 per dozen asparagus will pay a handsome profit.

When the soil has only been indifferently prepared, and poorly manured, earliness of the crop and large sized spears cannot be expected, and as a matter of course, under such circumstances a large share of what would be the profits are not realized by the producer.

SOWING THE SEED.

Asparagus seed should be sowed in the spring, in a bed made deep, mellow and rich. When the surface of such a bed is raked over, removing any stones or other obstructions, then shallow drills should be opened about one inch deep, and a foot apart. The seed is strewn thinly by hand in these drills, and then covered by raking the bed with wooden rakes drawing them in the direction of the drills. Fresh seed will sprout in two weeks from the time of sowing, in favorable weather. Seed older than one year will take longer to germinate, and if more than three years old, is unsafe to sow with any certainty of its ever coming up.

It is a good plan to scatter some radish seed in the drills at the time of sowing the asparagus seed. The radish will germinate and come up in a few days from the date of sowing, marking the lines of the rows. This will give a chance to run a scuffle hoe between the rows, destroying any weeds that may appear, and keeping the surface loose until the asparagus plants are well up. Then the spaces between the rows should be disturbed frequently and no weeds nor grass allowed to grow. Under favorable circumstances well grown one year old plants will be strong enough for transplanting in the permanent bed. In case the plants are weak, it is better to let them remain in the seed-bed another season before making the bed. Plants older than two years should not be planted, for more than likely they will fail to give satisfactory results. Those who only want a few hundred plants to make a family bed, will find it cheaper to buy them from some responsible person than to raise them from the seed. One pound of seed will sow a bed 20 by 100 feet, and if the seed is fresh will give about 15,000 plants.

PREPARING THE GROUND.

When properly made, an asparagus bed will produce paying crops for a quarter of a century, under good annual treatment. There should be no short-sighted economy practiced in putting the ground in order. If the ground selected is naturally wet, or likely to become so,

then by all means have it thoroughly under-drained. Asparagus can only be grown to the highest point of profit on soil that is free from stagnant water thoroughly pulverized to a depth of at least twenty inches, and then heavily manured. There will be more satisfaction in planting only a quarter of an acre on this thorough scale, than in planting an acre under indifferent preparation and poor manuring. The ground should be thoroughly plowed and subsoiled both ways, and then plenty of well-rotted yard manure plowed under. The more manure that is applied, the more productive the yield will be when the plants are fairly established. Barn yard manure, composted with the salt and lime mixture, will be found an excellent manure for asparagus.

PLANTING.

It has long been a mooted question whether the fall or spring was the best time to plant an asparagus bed. In most cases more will depend on the condition and tilth of the soil than the time roots are planted. Where the soil is heavy and retentive of moisture, and long and severe winters, undoubtedly the spring is the best time. But on sandy or clay loam, and as far south as Delaware or Virginia, fall planting will do just as well, and often better, than spring planting under similar circumstances. When the ground is prepared by frequent plowings and subsoiling for field culture, or the garden spot thoroughly trenched with the spade, then the furrows should be run but three inches deep, and three feet apart each way. A single plant is set at each intersection, being careful that every root of the plant is stretched out to its full length, and then covered with not more than four inches of earth, if planted in the fall, and only about two inches when set in the spring. This light covering at first, or until the plants have started to grow, is the safest plan to follow. When the young shoots are three or four inches above the surface, then, by running a cultivator between the rows, the loose earth will fall toward the row of plants, adding a couple or more inches of covering above the crowns of the plants—making in all from four to five inches in depth.

In garden culture, this second covering may be drawn over the rows by the hand hoe, any time during the summer. A cultivator should be kept going between the rows often enough to prevent the growth of weeds in the bed. This will be found the cheapest method of culture. When planted in the fall, the rows should have a light mulch of barn-yard manure put on in November, and in the spring, following this mulch, with an additional quantity of manure, either barn-yard, fish, guano, bone-dust, or superphosphate, should be applied, and all turned under early in April, or as soon as the ground is dry enough to work.

Annual dressings of common salt will improve the quality and increase the size of asparagus. There need be no apprehension of danger from the application of salt to asparagus. I have frequently put on as much as two inches in thickness, on different spots, on an asparagus

bed, and then the young shoots came through this coating of salt without apparent injury. A dressing of twenty-five or thirty bushels of salt to the acre on an asparagus bed every second year, will be quite enough, in connection with the annual coating of barn-yard, a compost to be applied in the fall or spring, as circumstances may dictate.

No asparagus should be cut from the bed the first or second year. Some growers carry this so far as not to cut any until the fourth year from the time of planting. In case the plants have grown vigorously, a third of a crop may be cut without at all injuring the plantation the third year. The amount taken off the third year depends altogether on the condition and vigor of the plants. In case they are weak, it would be poor policy to weaken them still more by cutting for market or home consumption too soon. In the fall of the first year it is a good way to throw a shallow furrow from either side toward the rows, and then rounding them off with a hoe or a rake. This slightly elevated ridge will dry out sooner in the spring than a flat surface, and asparagus treated in this way, will often make a difference in earliness of five or six days, which is an important item to those who grow it for market.

Early asparagus always brings higher prices than what comes in late in the season, and, therefore, every advantage by location, character of soil and treatment, should be taken into consideration by those who are about to commence its culture for profit.

VARIETIES.

There were only two varieties generally cultivated for market purposes until quite recently. These were the green and purple-topped. The identity of these two were frequently doubted by intelligent gardeners, and the size and difference in color attributed to location, soil, and heavy or light manuring. Two years ago, S. B. Conover, of New York, introduced a variety under the name of "Conover's Colossal." For this variety Mr. Conover claimed extraordinary size of spears, and that it was equal in quality and productiveness to those varieties that were in general cultivated for market purposes. This claim had to be tested by practical growers before discarding old and tried for new and untried kinds. Many doubted that it was any other than what was cultivated on Long Island, and other producing sections. I have watched the "Colossal" closely for two years, and firmly believe it is the best variety of asparagus that we have for field or garden culture. The spears will average twice the size of the common kinds, and the "Colossal" is equal, in my estimation, in quality and productiveness to any variety that I am familiar with. Plants at one year old will average as large as plants two years old grown on the same soil and under the same treatment, of the green or purple. In another article on this subject I will have something to say on the profits of asparagus culture.—*P. T. Quinn.*

Household Department.

Domestic Receipts.

WATERMELON RIND PRESERVES.—Select your rind, firm, green and thick; cut them in any fanciful shape, such as leaves, stars, diamonds, etc. When cut, weigh, and to each pound of rind allow one and a half pounds of loaf sugar. To green them take a brass or copper kettle, and to a layer of grape vine leaves, which should be well washed, add a layer of the rind, and so on until the last, which should be a thick layer of the leaves, and well covered with a coarse linen cloth. To each pound of the rind add a piece of alum the size of a pea; then fill up with warm water sufficient to cover the whole, and let it stand upon the stove, where it will steam but *not boil*, until the greening is completed, which will be in two or three hours. When green, lay them in clear, cold water, and commence your syrup. To each pound of sugar add one and a half pints of water, clarify, put in your rind; have ready sliced some lemons, two to each pound of rind, and when about half done add the lemons. Boil until the rind is perfectly transparent. If you like the taste of ginger, add a few pieces of the root, which will impart a high flavor, and is very pleasant when blended with the lemons. This preserve when candied is a very good substitute for citron in fruit-cake and mince-pies.

WATERMELON PICKLES.—Ten pounds of watermelon rinds boiled in pure water until tender; drain the water off, then make a syrup of two pounds of sugar, one quart of vinegar, half an ounce of cloves, and one ounce of cinnamon. The syrup to be boiled, and poured over the melon rind boiling hot. Drain the syrup off and let it come to a boil and pour it over the melons three days in succession. The rind prepared in this way, makes a very fine pickle, and if carefully bottled will keep a long time.

CREAM BEER.—Two and one-fourth pounds of white sugar, two ounces tartaric acid, juice of one lemon, and three pints of water; boil together five minutes. When nearly cold, add the whites of three eggs beaten to a froth, one half cup of flour well beaten with the egg, and half an ounce of wintergreen essence, or any other kind preferred; bottle and keep in a cool place.

CITRON PRESERVES.—After having cut your citron in fanciful shapes, place them in a jar

of salt water, and let them remain three days and nights, then in fresh water two days and nights, and the same length of time in alum water. Scald them well in the alum water, drop them into fresh water, and let them remain one night, then boil in fresh water until transparent; cover them while boiling with grape leaves. Then make a syrup, allowing two pounds of loaf sugar to one of citron, and boil like preserves.

THE HOUSEWIFE'S TABLE.—The following tables will very materially aid persons not having scales at hand, to measure any article wanted. Allowance should be made for extraordinary dryness or excessive moisture of the articles needed:

Wheat flour.....	1 lb. is.....	1 quart.
Indian meal.....	1 lb. 2 oz. are	1 quart.
Butter, when soft.....	1 lb. is.....	1 quart.
Loaf sugar, broken.....	1 lb. is.....	1 quart.
White sugar, powdered.....	1 lb. 1 oz. are	1 quart.
Best brown sugar.....	1 lb. 2 oz. are	1 quart.
Eggs.....	10 eggs are...	1 lb.
Flour.....	8 quarts are...	1 peck.
Flour.....	4 pecks are...	1 bus.

LIQUIDS, ETC.

Sixteen large tablespoonsful are.....	1 pint.
Eight large tablespoonsful are.....	1 gill.
Four large tablespoonsful are.....	1 gill.
Two gills are.....	1 pint.
Two pints are.....	1 quart.
Four quarts are.....	1 gallon.
A common sized tumbler holds.....	1 pint.
A common sized wineglass is.....	1 gill.
A tea cup is.....	1 gill.
A large wineglass is.....	2 ozs.
A tablespoonful is.....	1 oz.
Forty drops are equal to.....	1 teaspoonful.
Four teaspoonsful are equal to	1 tablespoonful.

IMPROVED METHOD OF VACCINATION.

In view of the great spread of the small-pox at the present day in America and Europe, and the importance of successful vaccination, the suggestion of an English physician, Mr. Ellis, may be of some importance. This gentleman remarks that ordinary vaccination is performed by scraping off the epidermis, and thrusting the vaccine virus into a puncture made by the lancet. A greatly improved method, however, consists in first raising a small blister by a drop of cantharides applied to the skin. This is to be pricked, and the drop of fluid let out, and then a fine vaccine point put into this place, and withdrawn after a moment of delay; the epidermis falls back and quite excludes the air, shutting out any germs that may be floating in the atmosphere. This method has been practiced by Mr. Ellis

for twenty years; and out of hundreds of cases of vaccination which he has performed, he has never had an instance of blood-poisoning or abscess, while by the ordinary method the occurrence of secondary abscess is by no means uncommon, and that of pyæmia is often observed. The comparative safety of this method is believed to be due, first, to the exclusion of the air; and second, to the lesser size of the aperture for the introduction of mischief than when the punctures are made by the lancet.—*EDITOR'S SCIENTIFIC RECORD, in Harper's Magazine.*

HOW PEACHES ARE CANNED.—The peach can be preserved by the canning process and retain its delicate flavor almost completely. Hence canned peaches are deservedly popular, and nearly every housekeeper puts up a supply for winter use. Considering the time and trouble many housekeepers expend in fussing with a basket or two of peaches, we doubt if it is not upon the whole cheaper to buy the canned fruit than to put it up at home. The quantity of fruit canned annually is immense. At the establishment we are about to describe, four thousand baskets of peaches are disposed of daily. As there are over sixty canning establishments in Baltimore, and others at different points in Delaware, it will be seen that the business is one of no little importance. In a recent visit to the peach-growing districts, we visited "Round Top," in Kent County, Md., the property of John Harris, Esq. This place is a long distance from railroads, but has daily communication with Baltimore by steamer. The orchard comprises 1013 acres, the greater part of the trees being in full bearing. The canning establishment is in the center of the orchard; and from it there is nothing to be seen on every hand but peach trees. The buildings, being in use only a few weeks in the year, are rather rough in appearance, but are so arranged that the work goes on with great rapidity and regularity. The principal buildings are two long, two-story, wooden structures, placed parallel to each other, with a roadway between. The two are connected about midway of their length by means of a broad bridge. The wagons, as they come in from the orchard, stop under this bridge to unload; the baskets are passed up to hands stationed upon it, who take the yellow peaches into the upper story of one house and the white ones to the other. The internal arrangement of both houses is the same, and the processes in both are identical. The paring is all done by hand; various machines have been tried, but none have yet been found to work satisfactorily. Some five hundred women and girls are engaged in the establishment, the majority of

them in paring. The fruit is halved, the stone removed, and then pared. Under-sized fruit, and that which is too soft, is thrown aside, to be used as "pie fruit." The women are paid six cents a bucketful for paring, and in this as in other steps of the process, the accounts are kept by the use of checks. The pared fruit is passed through an opening to the floor below, where it goes into hopper-like receptacles, from which it is filled into the cans. As fast as the cans are filled, they go to an inclined platform, which stands by the side of a tank of hot syrup, which is of a strength to make the fruit sweet enough for the table—about a pound of sugar to the gallon, we think. The syrup is ladled into the cans, allowing it sufficient time to fill all the spaces among the fruit. The cans are next washed and wiped, to remove the syrup, the cover placed on, and passed over to the tinsmiths. The soldering is done very rapidly; each cover has a slightly turned edge, which drops into a groove in the top of the can; one sweep of the soldering iron around this groove effectually closes the can. The covers have a small hole punched in the center; this is to allow the escape of the air, which is expanded by the heat of soldering. Were it not for this, the work could not be performed near so rapidly, as the expanded air would force its way through the melted solder and render the work imperfect. When the cover is secured, this little vent-hole is closed by a drop of solder.

The tinsmiths work by the hundred, and make, according to their skill, from eight dollars to twenty dollars a day. Some very rapid workers have been known to make as much as forty dollars in a day. After the soldering, the cans are placed upon a circular iron rack, which is raised by a crane and lowered into a circular vat of water, which can be rapidly brought to boiling by turning on steam. The cans being immersed, the heat of the water is gradually raised. If there is any imperfection in the soldering of the cans, it may now be detected, as the small quantity of air within the cans, being expanded by heat, will escape in the form of small bubbles. If any imperfect can is observed it is removed. The boiling is continued until the fruit is thoroughly cooked through, when the rack is raised from the vat and the cans taken to the store-house. Labeling and packing in cases is done later in the season. Mr. Harris expected that his stock would amount to a million of cans. Over-ripe and small peaches are canned without paring. They are put up in large cans, and sold to bakers, hotels, etc., as pie-fruit.

None of the fruit raised at this orchard is shipped, but all is canned. During the height of the season the hours of work begin early and end late; but while there is a press of work, there is no confusion, the whole being so systematized by Mr. Harris and his intelligent sons that each person has his or her proper place and duties.

The large force of employees, mainly women, has to be boarded and lodged, and the arrangements for this seemed to be very complete and comfortable. Such a herds of wo-

men picked up by advertisement in large cities will, of course, contain more or less of characters that may be called—to put it mildly—unlovely, and it requires no little tact and firmness to keep peace at all times. The women earn from six to ten dollars a week, and are furnished with very good board for the moderate price of two dollars. A third or more of these workwomen were negroes of all shades of color, from the purest African to the lightest mulatto. These have a portion of the building to themselves. Their favorite amusement is singing, and their plaintive, weird melodies produced a novel effect.—*Hearth and Home.*

What Home Is.

Home is the one place in all this world where hearts are sure of each other. It is the place of confidence. It is the place where we tear off that mask of guarded and suspicious coldness which the world forces us to wear in self-defence, and where we pour out the unreserved communications of full and confiding hearts. It is the spot where expressions of tenderness gush out without any sensation of awkwardness, and without any dread of ridicule. Let a man travel where he will, home is the place to which "his heart, untraveled, fondly turns." He is to double all pleasure there. He is to divide all pain. A happy home is the single spot of rest which a man has upon this earth for the cultivation of his noblest sensibilities. And now, my brethren, if that be the description of home, is God's place of rest your home? Walk abroad and alone by night. That awful other world in the stillness and solemn deep of the eternities above, is it your home? Those graves that lie beneath you, holding in them the infinite secret, and stamping upon all earthly loveliness the mark of frailty, and change, and fleetingness—are those graves the prospect to which in bright days and dark days you can turn without dismay? God in His splendors—dare we feel with him affectionate and familiar, so that trial comes softened by this feeling? It is my Father, and enjoyment can be taken with a frank feeling; my Father has given it me, without grudging, to make me happy. All that is having a home in God. Are we at home there?—*Robertson's Sermons.*

CURE FOR BONE FELON.—The following is said to be a good remedy for this cause of suffering: "Take common rock salt, such as is used for salting down pork or beef, dry it in an oven, then pound it fine and mix with spirits of turpentine in equal parts. Put it in a rag and wrap it around the part affected, and as it gets dry put on more, and in twenty-four hours you are cured; the felon is dead."

Insurance Department.

Life Insurance as a Basis of Credit.

BY JOHN F. COLLINS, CHICAGO.

Thought is universal capital.

Thought pays prompt, constant interest.

Thought forestalls chance, error.

Thought, usefully applied, is business success.

Without it no man can succeed, every man must fail; with it, practically applied, gain is certain. Thought is hence the business man's best, safest, most unselfish banker. It is his board of directors, always ready to discount his paper, to enlarge his traffic, to guard his accumulations. Apply this element of business power as follows, and answer to yourself for the useful results:

1st. Are you in business on your own account? If so, what is your line of discount at your bank? How is it secured? Would it fret, annoy you any, were you suddenly taken ill? Would your estate pay the amounts should you as suddenly die, without serious, perhaps, fatal shrinkage? Would your administrator know how to handle your stock, pay your obligations as they mature, and leave your estate solvent, or, if solvent, unimpaired?

Think! You can secure this, beyond the shadow of a doubt. Do not be disgusted. Read!—by insuring your life for the benefit of your creditors at large for the amount of your average liability. Simple, easy, cheap, certain, but you must do it now. To-morrow you may not be insurable. To-morrow may be the day upon which you will most require the sense of security. This is no sermon, it is business talk. Had you a note due to-day, would you wait until to-morrow before you made your account good? If so, you would go to protest surely.

2d. Have you a partner or partners in business? What assurance have you that he or they will live to the termination of the period for which the partnership was formed? What assurance have you that all you have in the concern may not be jeopardized, indeed altogether lost, by the sudden death of one and the ignorance or prejudice of his administrator? Should you die,—it is possible,—might not all you have accumulated be fraudulently consumed, or prematurely squandered in settling the partnership? Or, if all were honest, what know you of the evils likely to befall your estate?

Think! that, by each partner insuring his life for the benefit of the others, for the amount he has at risk in the business, all such evils may be avoided, estates saved, business and capital left unimpaired.

3d. Are you a junior partner, dependent upon your skill and ability for your interest, and for your future success upon the life of the capitalist? What have you to hope for if he dies? Are not your skill and ability worth as much to him as his capital is to you? Is your

interest in the business worth no more to you than would be your success as a salaried clerk or salesman? Would you like to be a clerk again? Are you not liable, likely to be, should the capitalist suddenly die? Should you die, could not the capitalist quite easily supply your place? What could you do should he die, but silently look on while the business of your prior life passed into other hands as proprietors?

Think! were the life of the capitalist insured for the amount of his capital in the business, would not your conditions be secured, your future better protected?

Would this be an unwarrantable guarantee for the capital to give to the brains and labor? You have worked up from boy, clerk, to partner. Are not the years gone by invested capital probably deserving ample protection in its future? Should the capitalist die, who would take his place, and pay over to his estate the capital invested in the concern? What assurance has he, should he die, that the bad management of juniors may not impair it?

4th. Are you in business with your father? If so, are you not building up his general estate? Are you not entitled to the "good will," after his decease, of the business you yourself are creating? Is not that your capital by creation and not inheritance? May not all be ruined by complex, vexatious litigations in settling the estate hereafter? Not all estates are peaceably settled.

Do you owe your father in your business relations greater protection to his general estate, than he owes you on your individual labor, tact, energy, industry? Moreover, is it right that your father should leave his general estate liable to any troublesome complications with the partnership, likely to injure the one or impair the other?

Think! that by insuring the life of your father for the amount of the capital he has at risk in the business, you separate the whole question of the partnership from his estate.

While you remain one of the heirs at law, would not your rights as a partner be protected?

Life insurance costs but very little; less, indeed, in most cases, than fire insurance, without which your credit would not be worth a fig.

Think! that in either of the cases named your credit is strengthened, because the liability to delays and final loss in settlement is greatly reduced if not entirely obliterated.

It is a feeling common to the mind of nearly every man that although the sky of his neighbor may become dark and gloomy, his own will remain bright and full of sunshine; while his neighbor's business will not prosper, his of necessity must be a success. Hence it is the more difficult to impress upon each individual the thought that the evil he is looking to befall another may be making rapid strides toward his own cherished plans. Are you sure you are fully protected in your business pursuits, guaranteed as to the future safety of your accumulations, and that the thoughts herein have no claim upon your consideration? If so, hand this to your neighbor who in your judgment is not so fortunate.

Lines.

BY FATHER RYAN.

Go, down where the sea waves are kissing the shore,

And ask of them why do they sigh?

The poets have asked them a thousand times o'er,
But they're kissing the shore as they've kissed it before—

And they're *sighing* to-day, and they'll sigh evermore;

Ask them what ails them?—they will not reply,
But they'll sigh on forever, and never tell why.

"Why does your poetry sound like a sigh?"

The waves will not answer you—neither shall I.

Go, stand on the beach of the boundless deep,

When the night stars are gleaming on high,
And hear how the billows are *moaning* in sleep,
On the low lying strand, by the surge-beaten steep—

They are moaning forever wherever they sweep;
Ask them what ails them?—they never reply,
They moan, and so sadly, but will not tell why.

"Why does your poetry sound like a sigh?"

The billows won't answer you—neither shall I.

Go, list to the breeze at the waning of day,

When it passes and murmurs "Good-bye;"
The dear little breeze! how it wishes to stay,
Where the flowers are in bloom—where the singing birds play;

How it *sighs* when it flies on its wearisome way!
Ask it what ails it?—it will not reply;

Its voice is a sad one—it never told why.

"Why does your poetry sound like a sigh?"

The breeze will not answer you—neither shall I.

Go, watch the wild blasts, as they spring from their lair,

When the shout of the storm rends the sky;
They rush o'er the earth, and they ride through the air,

And they blight with their breath all that's lovely and fair;

And they *groan* like the ghosts in the "land of despair;"

Ask them what ails them they never reply;
Their voices are moanful—they will not tell why.

"Why does your poetry sound like a sigh?"

The blast will not answer you—neither shall I.

Go, stand on the rivulet's lily-fringed side,

Or list where the rivers rush by;

The streamlets, which forest trees shadow and hide,

And the rivers, that roll in their oceanward tide,

Are *moaning* forever, whenever they glide;
Ask them what ails them?—they will not reply;

On, sad-voiced, they flow, but never tell why.

"Why does your poetry sound like a sigh?"

Earth's streams will not answer you—neither shall I.

When the shadows of daylight are *gray* on the hill,

And *dark* where the low valleys lie,

Go, list to the voice of the wild whippoorwill,
That sings when the songs of its sisters are still,

And wails through the darkness so sadly and shrill,

Ask it what ails it—it will not reply;
It wails sad as ever—it never tells why.

"Why does your poetry sound like a sigh?"
The bird will not answer you—neither shall I.

Go, list to the voices of earth, air, and sea,

And the voices that sound in the sky;

Their songs may be joyful to *some*, but to *me*,
There's a sigh in each *chord*, and a sigh in each *key*,

And thousands of sighs swell their grand melody;

Ask them what ails them?—they will not reply;
They sigh—sigh forever—but never tell why.

"Why does your poetry sound like a sigh?"
The voices won't answer you—neither shall I.

One by One.

They are gathering homeward from every land,
One by one.

As their weary feet touch the shining strand,
One by one,

Their brows are encircled in a golden crown;
Their travel-stained garments are all laid down,
And clothed in white raiment they rest on the mead,

Where the Lamb ever loveth his children to lead,
One by one.

Before they rest they pass through the strife;
One by one;

Through the waters of death they enter life,
One by one.

To some are the floods of the river still,
As they ford on their way to the heavenly hill;
To others the waves run fiercely wild,
But all reach the home of the undefiled,
One by one.

We, too, shall come to that river's side,
One by one.

We are nearer its waters each eventide,
One by one.

We can hear the noise and dash of the stream,
Now and again, through our life's deep dream;
Sometimes the floods all its banks overflow,
Sometimes in ripples the small waves go,
One by one.

Jesus, Redeemer, we look to thee,
One by one,

We lift up our voices tremblingly,
One by one.

The waves of the river are dark and cold,
We know not the spot where our feet may hold,
Thou who didst pass through in deep midnight
Strengthen us, send us thy staff and thy light,
One by one.

Plant thou thy feet beside us as we tread,
One by one,

On Thee let us lean each drooping head,
One by one.

Let but Thy strong arm around us be twined,
And we shall cast all our fears to the wind.
Savior, Redeemer, be thou in full view,
Smilingly, gladsomely we shall pass through,
One by one.

The Southern Farm and Home.

MEMPHIS, TENN., NOVEMBER, 1872.

WM. M. BROWNE, - Editor and Proprietor.
BOYLE & CHAPMAN, - - - Publishers.

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

Our Premium List.

We request attention to the extensive and varied list of valuable premiums, published in our advertising columns, which we offer to those who will take the little trouble needed to collect subscriptions for the FARM AND HOME.

This list is so large and comprehensive that every body will find in it something suited to his taste or wants.

CLUB ARRANGEMENTS.—By special arrangements with the proprietors of the following leading journals, we are enabled to furnish them and the FARM AND HOME to subscribers at the following rates:

Weekly Memphis Appeal and FARM AND HOME for one year.....	\$3 50
Weekly Arkansas Gazette and FARM AND HOME for one year.....	\$3 00
Columbus (Miss.) Democrat and FARM AND HOME for one year.....	\$3 00
Appleton's Journal and FARM AND HOME for one year.....	\$5 00
Lippincott's Magazine and FARM AND HOME for one year.....	\$5 00

THE PLANTATION, of Atlanta, announces, in its last issue, that it will henceforth appear monthly instead of weekly, its patronage not being sufficient to sustain a weekly publication. We sincerely regret this, first, because the able efforts of our friend, Col. Yancey and his associates, have not met the response from the agricultural public to which they were so well entitled; and, secondly, because it is a lamentable indication of the little interest which the Southern people take in publications designed for their benefit, if they are prepared and issued on this side of the Potomac. *The Plantation* was one of the ablest and best conducted of the

agricultural papers, and we know that it will sustain its reputation in its changed form, because our valued friend, Col. Yancey, says so, and because we know he always keeps his promises.

THANKS.—Since our last number was issued we have received complimentary invitations from the Columbus (Ga.) Industrial Association, through the Secretary, G. W. Peabody, Esq., to attend the third annual fair of the association, to be held at Columbus, on October 29th and five following days; and like invitations from the Maryland State Agricultural and Mechanical Association, through the Secretary, Major D. C. Trimble, and from the Phillips County, Ark., Agricultural Society, through Judge Bennett. We sincerely regret our inability to accept these invitations. From the enterprise and zeal of the managers, and the public spirit and liberality of the citizens of Columbus, Baltimore and Helena, we are assured that these fairs were attractive and successful.

NAPOLÉON HILL, Esq.—The members of the Memphis Chamber of Commerce have done well and wisely in selecting Napoleon Hill, of the firm of Hill, Fontaine & Co., as their presiding officer. His prominent position among our leading merchants, his thorough knowledge of the commercial resources and wants of Memphis, and his life-long identification with her interests, together with his intellectual qualifications and high character, render him peculiarly qualified for the position to which he has been called.

BEST BALE OF COTTON.—The premium of \$500 which was offered by the St. Louis Fair Association for the best bale of cotton raised in Georgia, has been awarded, we rejoice to see, to Capt. T. G. Holt, of Bibb county, Ga., the zealous and enterprising President of the Bibb County Agricultural Society, and one of the most intelligent and progressive planters in Georgia. We congratulate our friend, Capt. Holt, on his success, and trust that this is but the earnest of his future agricultural triumphs.

WORKS OF ART.—Visitors to the Exposition should not neglect to visit and examine carefully the many valuable pictures in the art gallery, among which the finest and most valuable are those contributed by F. S. Davis, Esq., President of the First National Bank, from his private collection. The landscape by Kraus, and the full-length portrait of his Holiness, Pope Pius IX, are magnificent pictures.

FINE APPLES.—Our esteemed friend, the revered editor of the *Western Methodist*, has just shown us specimens of as fine winter apples as we ever saw, which were raised by Dr. Morrow, at Pea Ridge, Benton county, Ark. They are known there as the Kentucky Red, and are supposed to be of the same variety known at the North as the "Ben Davis" variety. We are gratified to learn that apple culture is becoming quite a profitable industry in Benton county and that portion of Arkansas, and that it will increase very largely when the railroads now in progress are completed, affording more easy and cheaper means of transportation to market.

The erroneous belief that apples would not grow well in the Southern States, like a similar belief as to clover, is rapidly giving way to the conviction that we can raise as fine apples and as fine clover as are to be found in any part of the country.

The Memphis Exposition.

We offer our sincere congratulations to the public-spirited and liberal gentlemen who originated the idea and carried out the plan of the MEMPHIS INDUSTRIAL EXPOSITION upon the brilliant success of their enterprise. They are entitled to and should receive the thanks of every citizen of Memphis for the many and great benefits which will result directly and indirectly to the city from their energy and benevolence.

Not merely will the Exposition advance the material interests of Memphis by the stimulus it will give to trade and the money which it will put in circulation, but it will inaugurate an era of industrial improvement, give a wholesome encouragement to home manufactures, cultivate and improve the taste of the people, lead us all into the way of progress, and embolden us to greater and higher effort in the future. Our Exposition may not equal other enterprises of a like character in the affluent cities of the more favored section of this continent, but when we consider the condition of our country, and the circumstances which surround us, we must rejoice at the cheering evidence which it affords of the industry and enterprise of our people, and we must indulge the hope that these qualities stimulated by success, enlightened by experience, and strengthened by practice will at no distant day secure for us that material independence and diffused prosperity which constitute the greatness and power of a people.

It is gratifying to see the interest that is taken in the Exposition by the crowds which have visited it daily and nightly since it was opened, and the pleasant impressions which it has made on all who have visited it. We hope that these crowds will increase daily, and that all who live within easy access of our city will avail themselves of the opportunity for instruction and entertainment which the Exposition affords. Circumstances have prevented us from visiting the Exposition as often as we desired, and examining its various departments as minutely as they deserved. We hope to be able to do so, however, before it closes. We notice in another place a few of the displays that particularly attracted our attention, intending in our next to give a more extended and detailed description.

THE FAIR OF THE SHELBY COUNTY AGRICULTURAL AND MECHANICAL SOCIETY commenced on Monday, the 21st of October, at the fair grounds near the city, where the directors, with commendable energy and taste, had provided every convenience and comfort for exhibitors and visitors.

Unfortunately the inclement weather of the early part of the week caused the attendance to be much smaller than was expected, but the pleasant weather of Wednesday, and the bright sky and genial atmosphere of Thursday, induced a large crowd to visit the fair grounds, and the various attractions presented by the large and interesting exhibition of articles agricultural, mechanical and domestic, besides a number of choice cattle of improved breeds, and a large collection of very fine horses.

The exhibition of field products was not as large as it ought to have been. What was exhibited was fine of its kind, and showed what Shelby county can do with skillful culture. But the meagerness of the display in this department betrays a want of interest in agricultural fairs which is much to be regretted. These fairs are designed principally for the advantage of the farmers, and wherever they show their appreciation of them by contributing to their success by their presence and the exhibition of their products, the advantages conferred are made manifest by increased crops, improved stock, economical cultivation and increased profits. Where the farmers refuse to avail themselves of the offered benefit, these happy results are never to be seen.

The stock display was very creditable. There were several splendid animals exhibited, and

many of them raised in Tennessee. Mr. Peter Conolly, of Shelby, took the first prize for the best milch cow, a beautiful animal. Mr. Milson took the prizes for steers, and Mr. Walter Handy that for fat cattle, all of which were well deserved. The show of saddle horses was very good, both as to number and quality. Mr. G. K. Weatherford's saddle mare, which carried off the \$30 prize; Mr. J. B. Todd's saddle mare, which took the silver cup; and Mr. Robert Harris' gelding, which carried off the silver cup offered for the best saddle gelding, sweepstakes for all ages, were specially worthy of remark. The blooded stallions of Mr. J. G. Ballentine, Mr. Holman Leatherwood, and S. F. Smith, and the blooded mares of Mr. T. Bond, of Vicksburg, Miss., and Mr. M. W. Kennedy, were much and deservedly admired. The poultry show was very fine, both in numbers and varieties. There were upward of three hundred coops of chickens—Game, Brahmas, Black Poland, Silver Poland, Bantams, Cochins, Javas, Dominiques, Sultans, Houdans, Hamburgs, Creve-Cœurs, Lafleche, and Leghorns. Of turkeys—Bronze and Hollands. (The collection of Mr. Joseph Cash, of Shelby county, merits special notice.) Of Geese—Toulouse, Embden, Hong Kong, Barnacle and Brant. And of ducks—Muscovey, Cayuga, Rouen and Aylesbury.

The ladies, who are always prominent in every good and useful work, have contributed largely to the interest and attractiveness of the fair. The show of embroidery and fancy work, quilts, etc., was admirable, particularly that part of it which was the handiwork of our own Southern ladies.

The President, Directors and Secretary of the Agricultural Society, and their efficient and polite assistants spared no pains to provide for the entertainment of their visitors, and we take this occasion to tender to them our sincere thanks for the kindness and polite attention shown to ourselves and all connected with the FARM AND HOME.

These imperfect notes of the Fair were prepared before its close to meet the inexorable demand of the printer, and the necessity to prepare this issue for the press before the first of the month. In our next we promise a further notice, embracing the many objects of interest, mention of which we have been compelled to omit.

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

Notes of the Exposition.

Among the many objects of interest to be seen in the spacious halls and galleries of the Memphis Industrial Exposition, the following are certainly the most attractive, as well from their intrinsic merit as from their being illustrations of the enterprise, skill, taste and refinement of the merchants of Memphis:

B. LOWENSTEIN & BROTHERS—DRY GOODS.

The first thing that strikes attention as you enter the gallery at the southeast corner is the magnificent show-case of B. LOWENSTEIN & BROTHERS, the famous dry goods merchants of Main street. In this case, which is about twelve feet high, six feet square, made of oiled walnut and plate-glass, and finished in the most beautiful style, are grouped in folds a number of the richest silks for evening dresses of the loveliest and most delicate colors, and arranged with the skill of an artist. In the corners of the case, to give additional brilliancy to these exquisite colors, the finest and heaviest black silks and velvets, fresh from the looms of Lyons, are arranged with much taste and effect. The sides of the case are draped in festoons with the richest laces of Brussels, Mechlin, Valenciennes and Alencon, interspersed here and there with the finest gloves from the factories of Jouvin and Alexandre, and fans as beautifully finished as any the Palais Royal and the Rue de la Paix can produce. The display is really brilliant. The articles exhibited are all beautiful, and the manner in which they are grouped and arranged evinces considerable artistic skill.

ORGILL & BROTHERS—HARDWARE, ETC.

Passing along the same gallery, our attention was attracted by another display of a totally different character, but equally entitled to particular notice. We refer to the display of hardware, cutlery, guns, agricultural implements, etc., made by that old established and popular firm, ORGILL BROTHERS & Co., 310 and 312 Front street, wholesale dealers in hardware, etc., and agents for Deering's Horse Engine and Cotton Press, and Gullett's Steel Brush Gin. On a board six feet square, facing the gallery, is a representation of the king of birds, made exclusively of hardware, the head and beak of brass screws, the wings of files, the neck of wad punches, the tail of butcher knives, and the legs and talons of wad punches. The work is most ingeniously done and the effect is excellent. To the left of this center piece, on a smaller board, is a representation of the artisan's coat of arms, the bare arm holding a hammer and an anvil, constructed entirely out of carriage bolts. All round these works of art are grouped specimens of all sorts of hardware and cutlery of the best and choicest patterns. In the establishment of Orgill Brothers can be found everything in

hardware from a steam engine to a screw, and each article the best of its kind.

HOOK & LAGRILL—HOUSE DECORATIONS.

Still further on we stopped to admire the beautiful display of wall decorations in paper, satin, gilt mountings, paper hangings, shades, house painting, etc., of HOOK & LAGRILL, the well known dealers in French and American decorations, wall papers, etc., 326 Second street. Here are the most perfect imitations of fresco painting, panneling of every description, of the choicest marbles, and combinations of fresco with satin decorations, all exquisite in taste, both as to color and execution. The specimens of house painting in imitation of different woods are equally admirable. We do not believe that the work of this firm can be surpassed by any house decorator on the continent, or that their stock of French and American paper hangings and decorations is excelled anywhere. It is proper to add that the painting and decoration of the interior of the Exposition building was all done by Hook & LaGrill.

BOYLE & CHAPMAN—BLANK BOOKS, BINDING, PRINTING, ETC.

In the space allotted to BOYLE & CHAPMAN, in this same gallery, may be found as finely executed specimens of blank books as to binding, ruling and finish, and of printing of all sorts, as can be seen in any city on the continent. The time was when no Southern bank or counting-room contained a book of Southern manufacture, and when even the billheads of our merchants were printed in some Northern city. That time, we rejoice to know, has passed, and certainly no one in the southwest who needs blank books, binding or printing done in the best style, need go further than the establishment of our friends Boyle & Chapman, 279 Main street. Their binding of the third volume of the SOUTHERN FARM AND HOME, which they have on exhibition, is equal in finish to the finest English binding.

MITCHELL & HOFFMAN—FURNITURE, ETC.

In the gallery on the opposite side of the building we particularly admired the magnificent display of household furniture, carpets, window curtains, cornices, etc., by MITCHELL & HOFFMAN, of 308 Main street, occupying three sections of the gallery. The furniture consists of two parlor sets, a set of bedroom furniture, and furniture for a dining-room and library. It is difficult to say which is the handsomest or most elegant. They are all of the newest style and most elaborate finish, not manufactured for show, but taken from the general stock to be found in their ample sales-rooms. We were much pleased to learn that all the upholstery work, which is as fine as can be imagined, was done in Memphis, and may

therefore be considered a specimen of Southern manufacture. The rosewood and crimson satin parlor set is as fine a specimen of upholstery as we ever saw. We also admired very much the window decorations (*lambrequins*, we believe they are called,) and cornices exhibited by this house.

F. H. CLARK & CO.—WATCHES, JEWELRY, ETC.

Those who think that to get a good or fine watch they must send to London, Locle, Geneva or Copenhagen, should see the splendid collection of American watches from the Waltham Manufacturing Company (Robbins & Appleton), contained in the cases of our esteemed friends, F. H. CLARK & Co., corner of Main and Madison streets. Here are to be seen every variety and style of watch, from the delicate jeweled and enameled *bijou* of the lady to the most massive and elaborately wrought time piece and chronometer. This watch display alone is well worth a visit to the Exposition. It is a forcible illustration of the inventive skill, enterprise and progress of our people.

Besides this large display of American watches—the finest we ever saw—F. H. Clark & Co. have on exhibition beautiful specimens of silverware, jewelry, etc., selected from the large stock which they always keep on hand. We will add that from our personal knowledge and experience that a more reliable merchant or worthier citizen than James S. Wilkins, the resident partner of F. H. Clark & Co., cannot be found anywhere.

WHEELER, PICKENS & CO.—DEALERS IN WOOD AND WILLOW WARE.

A prominent feature of the exhibition is the pyramid of wood and willow ware exhibited by WHEELER, PICKENS & Co., 328 and 330 Main street, in which may be found a specimen of every article in that line that can well be thought of. The base of the pyramid is surrounded by children's carriages and bicycles of all shapes and styles, and the whole is arranged with great taste and skill. This firm was established in Memphis in 1865, and from small beginning has gradually extended its business until it now occupies the first place in its line supplying the trade and people of West Tennessee, Mississippi and Arkansas. Although the original firm name is continued, the present partners are T. Sherwood, business manager and purchaser, and C. S. Howe, cashier. They keep always on hand everything belonging to their line of business, and make a speciality of children's carriages. They will open on November 15 a large stock of German and American toys, selected expressly for the Christmas trade, and purchased on advantageous terms early in the season, and transported to Memphis while freights were low.

W. S. BRUCE & CO—CARRIAGES, ETC.

No one who sees the stock of beautiful carriages, buggies, phaetons, etc., exhibited by the

well-known house of W. S. BRUCE & Co., could suppose that scarcely two months ago their large establishment, stock, shops, etc., were destroyed by fire. With the energy and enterprise to which they owe their well-earned fame, they set to work the day after their misfortune, and before a week had elapsed they had their factory in full blast at their temporary location on Second street, and the builders at work rebuilding on a grander scale than before, a new factory on the old site. Among others, we noticed particularly the carriage on exhibition with maroon satin linings, and curved plate-glass in front, which is as beautiful and tasteful a specimen of the carriage-builder's art as can be seen anywhere. Substantial in every part, while it is light and graceful, handsome without being showy, roomy and commodious without being cumbrous, it will compare favorably with the finest carriages built by the best builders at the North. It is a credit to Memphis skill and industry. The display of our friends, Bruce & Co., gave us especial gratification, first on account of their acknowledged worth, and, second, because they have borne a heavy loss with a manhood worthy of all admiration.

WHEATON & CO.—HATS, FURS, &C.

We cannot withhold our tribute of admiration to the show of hats, caps, furs, &c., by WHEATON & Co., the old established firm at 279 Main street, at the sign of the tiger. They exhibit head-covering of every style and shape, of the best quality to suit every taste. Their stock of robes and furs of all varieties and qualities, from the Russian sable and royal ermine downward, is of the richest and most extensive. We cordially commend this house to Southern patronage and support. Their customers may depend on finding the "fair and square dealing" which they promise in their cards.

CUBBINS & GUNN—STEAM ENGINES, &C.

We notice, with peculiar pride and pleasure, those articles which are of Southern manufacture, and illustrate the skill and enterprise of our own people. Prominent among these we notice the engines made at the Union Foundry and Machine Shop of CUBBINS & GUNN, 160 to 174 Adams street, which are equal in every respect to the most highly-finished engines from Patterson, New Jersey, or Philadelphia. The beautiful engine (40-horse power) that drives all the machinery in the Exposition building, running as smoothly and with almost as little noise as a sewing machine, was manufactured in every part by this enterprising firm. They manufacture all sorts of steam engines and castings, and all the machinery for grist and saw mills, and sell reliable articles at reasonable prices.

MRS. M. C. HUNTER—MILLINERY, LACES, &C.

MRS. HUNTER, of the Southern Emporium of Fashion, 247 Main street, has a handsome plate-glass case containing beautiful specimens of the milliner's art, in hats of the latest style, richest material and highest finish; artificial flowers, of every hue, tastefully grouped together in the form of a bouquet; delicate bridal veils, decked with orange blossoms; costly laces, of all widths and patterns; ladies' handkerchiefs of cambric, as thin as tissue paper, with broad trimming of purest Valenciennes; fans of the most elegant manufacture, and a number of other articles in the same line—all beauteous in appearance, selected with the utmost taste, and arranged in the most attractive manner. Ladies who need any of the articles we have mentioned, will do well to call on MRS. HUNTER. They may depend on receiving the utmost attention and the full value of their money.

ELLIOTT & RIDGELY—FANCY GOODS.

This popular firm have a fine collection of bronzes, China vases, Japan trays, cabinets, &c., imported direct from Japan; real Turkey rugs and praying carpets, a large variety of articles of Berlin wool needle work, embroidery, bijouterie, table ornaments, fans and fancy goods, all of the choicest and most elegant description. They also exhibit a number of valuable things of historical interest which have been lent to them for the occasion, among others a patchwork quilt, which was made by Mrs. George Washington, and some finely mounted canes, the property of ex-President Davis, which were presented to him on different occasions. All who admire *objets de vertu* should pay a visit to ELLIOTT & RIDGELY's section.

LEOPOLD GÖPEL—PIANOS, &C.

The show of Knabe pianos, cabinet organs, and other musical instruments by LEOPOLD GÖPEL, of 375 Main street, is one of the most prominent and attractive features of the Exposition. His Grand and Grand Square pianos of Knabe's manufacture are really magnificent instruments in tone, power, form and finish, and are declared by both amateur and professional performers to be superior to all others. The Smith Cabinet Organ is also an excellent instrument. Mr. GÖPEL's show includes also a number of wind and string instruments of the best make and finish, as well as a number of other articles of musical merchandise. Mr. GÖPEL's long residence in our city, his large trade with the people of this section, his high character and musical knowledge, render it almost unnecessary to add in closing this notice that everything he sells is of the best of its kind.

C. C. WARD & BRO.—DRUGS, PERFUMERY, &C.

One of the most attractive sections in the west gallery is that occupied by the display of drugs, perfumery, chemicals and patent medi-

cines of C. C. WARD & BRO., druggists, 215 Main street. In the central case, which is ornamented by a finely executed bust, in marble, of General R. E. Lee, are every imaginable perfume and article for toilet use—brushes, combs, soaps, pomades, hair oils, &c., &c. This case is flanked on both sides by neatly-painted barrels of "Ward's Tonic Bitters," surmounted by pillars of bottles of the same valuable medicine. At the back are a number of stands containing an endless variety of drugs and solid and fluid medicines, manufactured by Thayer & Co., of Cambridgeport, Mass., made up with such skill and in such attractive shape as to make one feel that physic is not so "hard to take" after all. Whether one wants to minister to the body or to indulge in the luxuries of the toilet, either desire can be gratified by a visit to C. C. WARD & BRO.

J. C. WARD & CO.—CLOTHING.

The specimens of their stock of clothing, men's furnishing goods, trunks, satchels, &c., exhibited by J. C. WARD & Co., of 271 Main street, convey the positive assurance that they can suit every taste, fit every size, and supply every want in their line of business, from the finest overcoat to an under-vest, from a sock to a neck-tie, and all of the newest fashion, choicest materials and best make. They make a very fine display, and their stand has been particularly noticed and admired by all the visitors of the Exposition, as a happy combination of the useful and the ornamental. There are no more reliable dealers than J. C. Ward & Co.

R. G. CRAIG & CO.—AGRICULTURAL IMPLEMENTS, SEEDS, ETC.

The large number of agriculturists who have visited the exposition cannot fail to have been struck by the admirable selection of agricultural implements, garden and farm tools, seeds, etc., contained in the section occupied by R. G. CRAIG & Co., the well-known and reliable dealers of 377 and 379 Main street. There they saw the most beautifully-wrought plows of every size and pattern, adapted to every purpose, from the large cast-steel turn-plow of Collins' to the sharp and penetrating subsoiler of Brinly, all sorts of labor-saving machinery, Western walking gang cultivators, champion reapers, mowers, seed drills, hullers, corn-shellers, cutting-machines, and every imaginable implement for use on the farm or in the garden, with sacks of all sorts of seeds—rust-proof oats, clover, grass seed, etc., etc. By diligence, industry, scrupulous adherence to truth, and intelligent selection of the best articles of their several kinds, this firm is now the foremost in its line of business in the Southwest. We can commend them highly as in every way worthy of the patronage of our people.

BULBS.—We gratefully acknowledge the receipt of some choice hyacinth bulbs from R. G.

Craig & Co., 377 and 379 Main street, Memphis, who have recently imported a large collection of the rarest and most beautiful flowering bulbs.

We advise our friends, and especially the ladies, to make an early call on Craig, and secure some of these beautiful hyacinths, crocuses, &c. Now is the time to plant them, either in the open ground or in pots for pot culture for winter blooming.

Literary Department.



EDITOR'S BOOK TABLE.

THE MAID OF SKER. By R. D. Blackmore. (Harper and Brothers.) This is certainly the most original, most interesting, and cleverest novel that has appeared during the past twelve months. We might say more than this, for a perfect delineation of a character like that of Davy is by no means an annual achievement. Davy is the head and front of the book. He is the central figure around whom all the others revolve, although many of them are drawn with a power rarely equaled in modern romance writing. It would be very hard to give even an outline of the story. The book must be read from beginning to end to be properly appreciated or fully understood. It is admirable as a whole, showing study, research and careful work, especially in the vivid descriptions of Nelson's naval engagements, which show how thoroughly the author has the life, duties and habits of the sailor. The reader will soon discover after perusing a few pages of "The Maid of Sker" that it is a work of no ordinary merit, and that there are not many modern novelists—certainly not half a dozen—who are the equals of Mr. R. D. Blackmore.

THE BEGINNINGS OF LIFE. By H. Charlton Bastian, M. D. 2 vols. (D. Appleton & Co.) We confess that we have little sympathy with, and less admiration for, the batch of modern scientific writers who have recently published their theories as to the origin of species and the development of life. We regard the

books of Darwin and Huxley, and their co-laborers, as of most dangerous and evil tendency, because the groundwork and starting point of all their theories are practically a denial of the Holy Scriptures, and a subversion of revealed religion. Dr. Bastian's book is of the same character and tendency. If his hypotheses are correct, the Bible must be a fable, and were he to have given much more than three years' careful study to the development of his theory of archebiosis or spontaneous origin of living matter and of heterogenesis, or the origin of living things from other and different living things, we would not give one fig for his theory if it conflicted with the word of God. He is evidently a man of learning and profound scientific attainment. He evidently, too, is impressed with a conviction of the truth of what he has written; but, like Darwin, he has sought with his finite intellect to fathom mysteries which the Infinite Creator has made inscrutable, and has consequently been obliged to reject revelation in order to lay the foundation on which he builds his hypothesis.

We admire the industry, patient investigation and great learning displayed in this book, while we utterly disapprove its purpose and reject its teaching.

THE INSECT WORLD. By Louis Figuiet. (D. Appleton & Co.) Whoever wishes to obtain a perfect knowledge of the various families of insects and of the peculiarities and habits of the several varieties, should read this entertaining book, which has become celebrated in Europe. The edition before us is one of the best translations we have ever read.

MICHAEL FARADAY. By J. H. Gladstone, Ph. D. (Harper and Brothers.) Professor Tyndall, Dr. Jones and others have given the world the history of the labors of the renowned philosopher, but they have not given the history of the inner life, and familiar character of the man which this little book affords. Faraday was the favorite pupil and *protege* of the great Sir Humphrey Davy, and from the blacksmith's shop of his father rose to the highest distinctions ever accorded to a man of science. We commend this book particularly to the perusal of the young, as a forcible illustration of the oft-quoted line:

"Honor and fame from no condition rise," and as giving an interesting sketch of the life of the greatest natural philosopher of his time.

MIDDLEMARCH: A STUDY OF PROVINCIAL LIFE. By George Eliot, Vol. I. (Harper & Brothers.) There is a charm about the writings of George Eliot which is possessed by none other. All her creations are lovely, and they are wrought with a delicacy of touch and purity of polish which no other novel writer can approach. She can stir the profoundest emotions of her readers, while at the same time

she can satisfy the most critical taste. She can be passionate, philosophic and coolly minute. She can create a grand type and then finish it with the utmost delicacy of detail. After reading one of her books, you are at a loss which to admire more, the grand outline or the beautiful nicety of the tracery with which she finishes it. Her greatest characters are women. Her wonderful powers have been exerted in their delineation. "Middlemarch" is, we think, the best of her works. As you read it, you feel grateful to her for having written a book in which you find so many things that are admirable and pleasing.

CALIFORNIA: A BOOK FOR TRAVELERS AND SETTLERS. By Charles Nordhoff. (Harper & Brothers.) This is the most entertaining, most useful and comprehensive guide-book we have ever seen. It tells you how to go to California, what to see when you get there; if you are an invalid, where to go and how to recover your health; if you are fond of field sports, how to gratify your taste; and if you are a settler, wishing to engage in agriculture or fruit raising, Mr. Nordhoff's book contains a full description of the various climates and productions of the golden State. It is a first-rate book of its kind, and will be found of inestimable value to all California tourists and settlers.

SONG LIFE FOR SUNDAY SCHOOLS, &c. By Philip Phillips. (Harper & Brothers.) This volume is intended to illustrate by song and picture "the journey of Christians and her children to the celestial city." The beautiful hymns which it contains may well accomplish this purpose, for many of them are really gems of piety in song, but we cannot see how the woodcuts can illustrate anything but the rudeness of their engraving. Apart from this defacing effect of these very ugly and foolish little pictures, the book is full of merit, and will be much prized as a valuable aid to improved singing in the Sunday-schools.

THIRTY YEARS IN THE HAREM: OR THE AUTOBIOGRAPHY OF MELEK-HANUM, WIFE OF KIBRIZLI-MEHMET-PASHA. (Harper and Brothers.) This is in many respects a very remarkable book. It is the history of a woman written by herself, whose life has been a series of the most wonderful adventures and startling vicissitudes. While a mere child, she runs away with an English doctor, more than double her age, from whom in the course of time, after enduring much misery, she obtains a divorce. She then marries a Turkish nobleman of high rank, who, after many changes of fortune, becomes Governor of St. Jean d'Acre, and finally Grand Vizier of the Sultan. Her daughter by this marriage, Aishet, who is described as very charming, becomes quite a *belle* at the Court of Stamboul, and finally is married to a man whom she cordially detests. The joint experiences of mother and daughter, their persecu-

tions and sufferings, and final escape from Turkey, and refugee life in Western Europe, are the subject of the book. The descriptions of the life of Turkish women, their magnificent misery and modes of amusement, are interesting and graphic, and gives a better view of domestic life in the East than any book we know. After reading it, however, we came to the unpleasant conclusion that Melek-Hanum, judging from her own account of herself, is by no means a lovable character, and that if his Highness, Kibrizli Mehemet-Pasha was a sensible man, he must have been much gratified when he found that his wife had abandoned his bed and board. She is evidently a "disagreeable party."

A COMPENDIUM OF THE HISTORY OF THE UNITED STATES, by Alex. H. Stephens. (E. J. Hale & Son, New York.) The thanks of the people of the United States are due to Mr. Stephens for having given them the only school history of their country extant wherein the principles of the Constitution and Government are perspicuously and truthfully explained, and the student is taught the essential points in the annals of the Republic without admixture of sectional prejudice or partisan misrepresentation. It is a very valuable work, and though of necessity very much condensed, is yet complete in all its parts, lucid in all its statements, and philosophical in its arguments. As a textbook for schools it will be generally adopted, and as a book of reference for the adult it will be widely popular. In form and topography it reflects credit on its publishers.

A WAITING RACE, by Edmund Yates. (D. Appleton & Co.) This is a highly sensational, but very well written novel, by an author who, though he has written many, has never written an unreadable book. Several of the incidents are far-fetched, much of the plot is unnatural, and some of the characters are wicked beyond measure, but with all that, nobody who once begins to read the book will put it down without reading it through.

THE ADVENTURES OF A BROWNIE, by the author of "John Halifax, Gentleman." (Harper & Brothers.) Like everything from the pen of Miss Muloch, this little book is a charming one. Though designed for the amusement of children, "children of a larger growth" will take much pleasure in perusing it.

HOPE DEFERRED: A Novel, by Eliza F. Pollard. (Harper & Brothers.) We read this story with great interest, and pronounce it as far superior to the ordinary run of modern novels. It is a sad story of a long deferred hope ultimately realized after much trial and suffering, endured with heroic patience and true womanly fortitude. We do not remember to have seen any former work by Miss Pollard, but, judging from this book, she is

evidently a graceful, pleasing and forcible writer. It impressed us most agreeably.

MRS. BEETON'S DICTIONARY OF EVERY-DAY COOKERY, with 104 colored plates, (D. Appleton & Co.) This is the best and most comprehensive work in cookery and domestic economy in the English language, and should be the *Vade Mecum* of every housekeeper who wishes to have the best furnished table at the least possible expense.

LIPPINCOTT'S MAGAZINE, for November, is a capital number, full of instructive and entertaining matter. The following are the contents:

From the Field to the Fireside, by H. O. Sheaffer, Illustrated; The London Season, by Reginald Wynford; Monody on T. Buchanan Read, by George H. Boker; A Mission to Costa Rica, by R. M. Walsh; The Strange Adventures of a Phaeton, A Serial Novel, by William Black, author of "A Daughter of Heh," Chapters 27-29; Torpedoes, by John G. Barnwell; Sketches of Southern Life, by T. C. DeLeon; In the Dark, by Kate Putnam Osgood; An Evening with a Spiritualist, by E. P. B.; Aimee's Story, Chapters 1, 2, by Ita Aniol Prokop; Minor Shows, by Charles Dawson Shanly; A Modern Philosopher, by Jeanette R. Hadermann; Expectations, by Emma Lazarus; Private Art Collections of Philadelphia, by E. S., ix. Professor Fairman Roger's Gallery; Our Monthly Gossip—The French Band at Havre; Thiers at Trouville; Washington Pummelled, etc.; Literature of the Day.

BLACKWOOD'S MAGAZINE for September, (reprint of Leonard Scott Publishing Co.) contains some very able papers, the most noticeable of which is a sketch of Japan, a review of Madame de Lasteyrie's life of her mother, Madame de Lafayette, and an admirably written paper on the life and writings of Charles James Lever.

THE WESTERN RURALIST, (F. C. Wood & Co., Publishers, St. Louis, Mo.) We welcome this well edited periodical among our exchanges. Both in its original and selected matter, it shows ability, research and intelligent appreciation of what an agricultural journal ought to be.

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWNE, Memphis, Tenn.

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

VOL. IV. No. 2.

THE
SOUTHERN

FARM & HOME



DECEMBER, 1872.

W. M. BROWNE, EDITOR.

PUBLISHED BY
BOYLE & CHAPMAN,
MEMPHIS,
TENN.



NEW CROP SEED! SEED!

FOR FALL SOWING

JUST RECEIVED BY

R. G. CRAIG & CO.,
MEMPHIS, TENN.

Red Clover, - - - \$8.00 per bush.

Sow 10 lbs. to the acre.

Orchard Grass, - \$3.00 per bush.

Sow one bushel to the acre.

Herds Grass, - - \$1.75 per bush.

Sow one bushel to the acre.

Blue Grass, - - - \$2.00 per bush.

Sow one bushel to the acre.

Timothy Seed, - \$5.00 per bush.

Sow one bushel to four acres.

**White Clover, }
Alsike Clover, }
Lucern Clover, }**

- - 75 cts. per lb.

Sow six lbs. to the acre.

Seed Rye, - - - \$1.15 per bush.

Seed Barley, - - - \$1.25 per bush.

Seed Wheat, - - - \$2.25 per bush.

*In all cases Sacks will be charged extra to
the above prices.*

BRINLY PLOWS!

ALWAYS ON HAND.

No. 1, 7-in. cut (steel point and land side), \$ 8 50

No. 2, 8-in. cut (steel point and land side), 10 50

No. 3, 9-in. cut (steel point and land side), 11 00

No. 0, subsoil..... 6 50

EXTRA POINTS, &c.

No. 1, A, B or C steel point.....\$1 50

No. 1, A, B or C cast point..... 35

No. 2, B steel point..... 2 00

No. 2, B cast point..... 50

No. 3, B steel point..... 2 50

No. 3, B cast point..... 50

STANDARDS.

No. 1, cast standard.....\$2 00

No. 2, cast standard..... 2 50

No. 3, cast standard..... 2 50

No. 4, steel cotton sweep..... 3 50

No. 6, cotton scraper..... 2 50


No. 8, steel shovel mold..... 4 50

No. 10, cast shovel upright..... 1 25

No. 12, wrought bull-tongue..... 1 00

No. 14, steel half shovel..... 2 00

No. 15, buzzard wing, Dickson's steel sweep 3 50

 Improvements have been made from time to time upon the "Brinly Universal Plow." These changes are indicated by the letters A, B, C, etc.; therefore, persons ordering extra standards and points must be careful to give the letter as well as the number, also the date of the patent on the casting to be replaced, and state whether your plow is straight or crooked beam, and give the number of the kind of upright.

R. G. CRAIG & CO., Agents,

Memphis, Tenn.

THE WONDER WORKER.

MANSFIELD & HIGBEE'S MAGIC ARNICA LINIMENT,

Prepared from rare Essential Oils, Extract of Camphor, Extract of Arnica,
Chlorodyne and Magnetic Fluid chemically combined.

The great success of this powerful penetrating Fluid warrants the proprietors in pronouncing it the greatest Liniment extant. It is a penetrating Fluid, which passes immediately through all the tissues, muscles, and to the bone itself. Its action upon the Absorbents is not to seal them up, as other liniments do, but to open them and increase the circulation. It is based upon scientific principles for cure or natural restoration of all organic derangements, whether in man or beast.

Send for a Circular bearing the evidence of its wonderful efficacy, from the following well-known citizens of the South:

COL. PHIL. B. GLENN, of Shelby county, Tenn. Cured him of Spinal disease.

T. E. BRINLEY, Plow Manufacturer, Louisville, Ky. Cured him of a serious hurt received from a fall.

A. C. LANE, Horn Lake Depot, Miss. Cured him of Paralysis.

COL. S. J. WADLEY, Iuka, Miss. Cured him of a hurt of eleven years' standing.

COL. D. H. C. MOORE, Dardanelle, Ark. Cured his wife of rheumatism.

M. V. BOGAN, Olive Branch, Miss. Cured of neuralgia. Had suffered three years.

B. BUCK, Hartal's Crossing, Miss. Cured of neuralgia and rheumatism.

GEORGE M. SANDIFER, Madison Station, Ala. Cured of rheumatism of twenty years' standing.

DR. ALFRED MOOREMAN, Sacramento, Ky., writes: "Your Liniment gives universal satisfaction."

DR. J. W. TARRY, Dukedom, Tenn., writes: "Your Magic Arnica Liniment gives great satisfaction."

Hundreds of others have published their testimony to its great merits.

THE LADIES' REMEDY.

Dr. Jackson's Female Vigorator: A REGULATOR.

UNSURPASSED FOR THE CURE OF DISEASES PECULIARLY INCIDENT TO WOMEN.

The enlarged experience of Dr. Jackson, who made the Diseases of Women a specialty, made him eminently successful, and to that experience and success we are indebted for the happy combination known as his

FEMALE VIGORATOR.

This Preparation is intended specially for the Cure of Female Diseases, such as
**CHLOROSIS, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION,
SUPPRESSED MENSTRUATION, LEUCORRHEA, UTERINE ULCERATION,**
And all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really believed that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and those who are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and similar affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a faithful trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. See that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

WHILE THERE IS LIFE THERE IS HOPE!
THE VERY BEST LUNG MEDICINE EXTANT.

HUNGARIAN BALSAM OF LIFE.

This valuable compound is no secret preparation. Its ingredients are well known, and, what is better, have been well and successfully tested. Read the list:

**WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR,
HOARHOUND, LUNGWORT, SQUILLS, SENEKA, MATCOO, LOBELIA,
ENGLISH WOOD NAPHTHA.**

The most scrupulous care is observed in selecting the above materials, in order to secure the full medicinal powers of their active principles, and we claim that the HUNGARIAN BALSAM OF LIFE has not only the happiest and most effectual ingredients for its composition, but that it contains the LIFE of each ingredient in perfect combination. Wood Naphtha has attained a wonderful reputation for its powerful restorative powers in CONSUMPTION; but the numerous inferior articles and imitations called by its name have almost crowded out the pure and much more expensive genuine, and, in consequence, the latter is seldom accessible to the majority of the people. It is guaranteed that none but the purest and best English Wood Naphtha is used in the HUNGARIAN BALSAM OF LIFE, and the Proprietors can show, by Volumes of Evidence, it stands positively unrivaled for

THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL
TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA,
WHOOPIING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

The above Medicines, now long established and staple throughout the South and West, are manufactured with the most scrupulous care by the Sole Proprietors,

MANSFIELD & HIGBEE,
Memphis, Tenn.

Proprietors, also, of the TEXAS TONIC SYRUP, for Chills and Fever; LA OREOLE HAIR RESTORER, HIGHLAND BITTERS OR SCOTCH TONIC, DR. BRAZIER'S LIVER MEDICINE, &c.

For Sale by Druggists and Dealers in Medicines Everywhere.

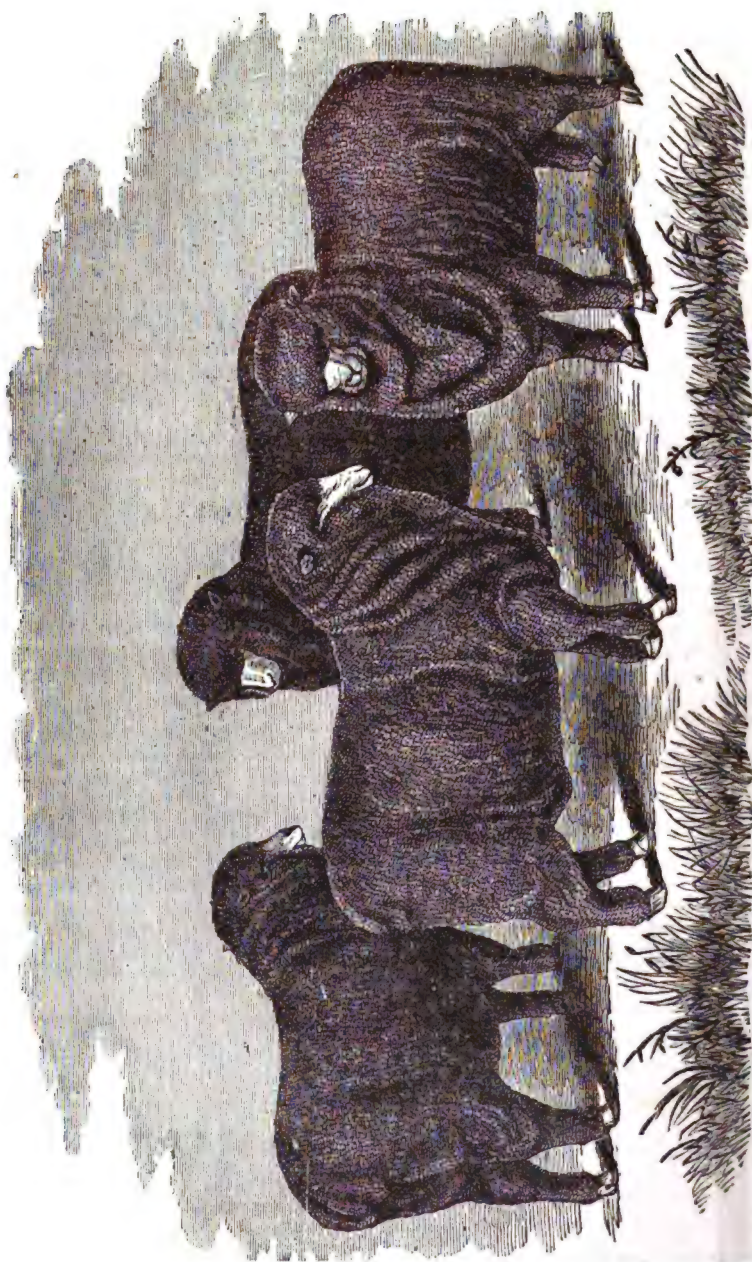
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GROUP OF SPANISH MERINOES.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV. MEMPHIS, TENN., DECEMBER, 1872.

No. 2.



Farm Work for the Month.

There is no new work to prescribe for this, the closing, month of the year. This is the time, of all others, to settle up and prepare with a fresh start for the New-Year. The cotton should be all picked, ginned, and prepared for market; the corn should be all gathered, peas should be all saved, potatoes should be put away safely; the small grain crops should be all in the ground; the wood for fuel should all be cut and piled away for winter use; all the out-buildings and fences should be overhauled and repaired; the tools and implements of husbandry should be cleaned, oiled and put away in good order; an inventory should be made of the farm property, crops, stock, tools, etc., and an account taken of expenses and income, so as to know, approximately at least, on which side the balance lies; and last but not least, all our debts should be paid, not forgetting the printer, who during the past twelve months has regularly sent you your paper, paying all the expenses, trusting to your honor to pay him when you made your crop.

If the things above enumerated have not been done, do your utmost to have them all attended to before the New-Year comes. Do not encumber the future with duties which belong to the present. It is consummate wisdom not to "put off until to-morrow" what can be done to-day, for we should always remember that "the night cometh when no man can work."

VOL. IV, No. 2—1.

Renew Your Subscription.

All whom it may concern will please take notice that no number of the **FARM AND HOME** for the next year, will be mailed except to those subscribers who have paid their subscriptions in advance. That this resolution is both reasonable and necessary, all will readily admit, who remember that the cost of publication is heavy and must be regularly met every month, and that we cannot be expected to work for nothing. We, therefore, earnestly and respectfully request all who have received the **FARM AND HOME** during the past year, to send us what they owe, together with subscription for 1873. And we ask all those who desire to receive the Magazine to send us their names and money as soon as possible.

We design, if sufficiently encouraged, to make many improvements in the paper, which will demand a considerable outlay of money. Will not some of our friends who have hitherto supported and encouraged us with their money and approval, make an effort in their respective neighborhoods to induce old subscribers to renew promptly, and to influence new subscribers to join them? Will you not give one day or a part of a day during this month to do this work, and thus by your combined efforts in our cause, give us a greeting for New-Year, which will cheer and stimulate us in our future labors? If each friend would obtain two, five or ten new subscribers, as occasion and means may permit, and send us the names and the cash before the 1st of January, we promise that they will find that in serving us they will also have served themselves. We have earnestly endeavored to be useful, by communicating through these pages such information as we possess, as well as that which we derive from others, which in our opinion was best suited to

the wants and circumstances of the Southern people. We have received from time to time, many flattering assurances that our labor was not in vain, and for these we now tender our heartfelt acknowledgments.

A MANUAL*

Of the Cultivation of the Grasses and Forage Plants at the South.

BY C. W. HOWARD.

[CONTINUED FROM NOVEMBER NUMBER.]

The seed of orchard grass is also very light and chaffy, and therefore two bushels should be sowed to the acre.

This grass was introduced into England from Virginia in 1764. It is very highly valued in that country, and in the Northern States it holds a high rank as a hay and pasture grass. But its chief benefit is lost at the North, as it cannot be pastured there during the winter.

Orchard grass is not suited to wet bottom land, but thrives in a rich upland. It grows well in an orchard or in thinned woodland. With the exception of meadow-oat grass, orchard grass stands a drought better than any other of the cultivated grasses.

Where hay is an object, these two grasses, meadow-oat and orchard grass, should be sowed withered clover and white, as each of the four blossoms at the same time, and is, therefore, simultaneously ready for the scythe. They answer also to mix with clover in a rotation, where the clover is to stand two or three years, as they mature rapidly, and assist in giving a compact sod. The farmer should remember, that a sod of good grass and clover turned under is quite equal in value to a costly application of either putrescent or purchased manures. The cultivation of these two grasses at the South cannot be too strongly recommended on soils adapted to them.

ITALIAN RYE GRASS.

This is perhaps the most beautiful of all the grasses. On very rich land, the green of the blades almost approaches bleachness, and their shining luster is metallic. It seems to be indifferent to climate and texture of soil, requiring only dryness and richness. It thrives as well in the severe climate of Scotland as in its native sunny Italy.

The statements of the yield of this grass on the irrigated lands near Edinburgh, are almost

*Entered according to Act of Congress, by C. W. Howard, in the Office of the Librarian of Congress, at Washington, D. C.

incredible. It has been grown with success in all parts of this State, Georgia, from the sandy lands of the coast to the blue limestone lands of the northwestern part of the State.

It is an annual, and should be sowed in August or September, at the rate of ten pounds of seed to the acre. Italian rye grass sowed in August or September will be ready for grazing in February. Although the return in winter grazing or hay is very large, on account of its being an annual, it is doubtful whether it be really more valuable than barley or rye, for the above purposes.

BLUE GRASS.

This well-known grass is, for certain purposes, one of much value. It is supposed that it is adapted only to a limited character of soils and climate. Kentuckians will tell us that the successful growth of this grass is monopolized by the Blue Grass region of Kentucky. This is a mistake. The lands in Kentucky on which the blue grass grows with such vigor, will bring fifty to seventy-five bushels of corn to the acre. Make any other lands at the South, unless it be a sand-bed, equally rich, and blue grass will grow well on them. In fact it is native in localities suited to it all over the South. It will be observed every where at the South, about abandoned settlements, to which stock have not had access, and especially where locust, china-berry or walnut trees are growing, that both blue grass and white clover have sprung up spontaneously. The writer has seen it growing in protected spots along the roadsides near Savannah. It certainly has annoyed him by coming an unasked volunteer into his meadows of herdsgrass and timothy in the blue limestone bottoms of Bartow County.

There are three reasons why it is generally supposed that blue grass will not succeed at the South.

It has been sown on land that is too poor. It requires a soil naturally or artificially rich.

Because it is burned up in a dry summer, it is concluded that it is a failure, and is plowed up. In Kentucky and in Ohio, blue grass frequently becomes so dry in the summer that it would burn up, if set on fire. But as soon as the cool weather and the rains of autumn set in, it resumes its green color and renews its growth. The same result will occur in the cotton States.

It may be remarked in passing, that all the winter grasses stop their growth and turn more or less yellow during the dry heat of

summer at the South. This is to be expected. Everything which grows, animal or vegetable, must have a period of sleep or rest. The grass which grows at the North during the summer, rests during the winter. The converse is true. The grass which grows at the South during the winter, must rest during the summer. Hence, winter grasses at the South should not be pastured during the summer, but should be left with a covering of their own leaves to shield them from the heat of the sun, and make the sleep of the roots comfortable.

The third mistake in the cultivation of blue grass arises from an ignorance of the habits of the plant. When it first comes up it is as fine as a needle, hardly visible to the most careful inspection. It increases its size but little during the first summer. Even the next year the stand will seem to be imperfect. But in the third and fourth year it spreads like magic, and occupies the whole ground. When a man goes into the lot on which he has sowed blue grass seed, finds month after month no blue grass, but a crop of weeds as high as his head, he concludes that it is a failure, plows up the ground and next spring puts it in cotton.

If a piece of ground be made very rich, and good blue grass seed be sowed upon it, there will be no failure. Give it time and it will take possession of the ground, even though it be invisible the first year.

On account of its slow maturity, blue grass seed should never be sowed by itself. It should be mixed with red and white clover, meadow-oats and orchard grass. These will occupy the ground at once, and the blue grass will advance slowly, but in the end will whip the whole of them out, except the white clover. For this reason blue grass should never be sowed with grasses designed for permanent meadow, as it will be certain finally to root them out.

On very rich land, blue grass will make hay excellent in quality but small in quantity. Its chief value is for winter pasture. While they last, meadow-oat and orchard grass are much superior to it. But the permanence of blue grass gives it a great advantage. It will last an indefinite number of years. After having been long grazed it becomes what is popularly called "hide-bound," and ceases to thrive. If a coultter is then run through it both ways, thoroughly tearing the sod, the grass will renew its youth and spring again with great vigor.

Blue grass, designed for winter pasture, should be treated in the same way with meadow-oat and orchard grass. Thus treated, it will not only last, but will continue to improve. This improvement will be the more decided if the stock grazing it are suffered to remain all night upon it. It should be remembered, in the treatment of pastures, that a large portion of the excrement of live stock is voided during the night, or when they first rise in the morning. This is, of course, lost to the pasture when the stock are driven to the yard at night.

Blue grass will bear more shade than any other grass, and it should, therefore, be the main reliance in woodland pastures. While it affords excellent grazing for horses, cattle and sheep, its greatest value is for hogs, especially in woodland pastures. The trees thinned out and trampled around scarcely ever fail in their mast, and between the acorns and grass hogs can be raised and nearly fattened at very small expense.

Four quarts of seed should be sown to the acre. No stock should be allowed to go on the ground the first year, nor indeed the second, until about the first of June, when a portion of the grass has gone to seed.

There is, perhaps, more nutriment in a given amount of blue grass than any other grass with the exception, perhaps, of the Bermuda. Live stock will keep fat on it, when they seem to be biting into the very clay or gravel. Close grazing does not injure it as it does many other grasses, from the fact that it is stoloniferous, or runs and spreads from the roots. On the whole, it is an exceedingly valuable grass to the Southern farmer who owns land rich enough to produce it.

The grasses named, viz.: meadow-oat, orchard and blue grass, must be our chief reliance for permanent winter grass pasture. The wild rye, or Terrel grass, will be found to be a useful adjunct. These four should be sowed together.

HAY GRASSES.

The grasses already described have their value as hay grasses, but are most valuable for their winter use. There are other grasses which are not green during the winter, which afford little aftermath, and which are valuable solely for their hay. At the head of these stands

TIMOTHY.

The history of this valuable grass is in some doubt. Loudon, in his *Encyclopedia of Agriculture*, states that it is a native of South Caro-

lina, and was introduced into England in 1780, by Timothy Hudson. Flint says that by some persons it was said to have been introduced into England from Virginia, in 1760, by one Peter Wynihs. It is sometimes called cat-tail, from the shape of the head. In New England it is called Herd's grass, as a man of that name found it growing in a swamp in New Hampshire. This should be borne in mind, when we are reading New England agricultural newspapers, otherwise we shall be confused. What we call herdsgrass, they call red top.

As a mere hay grass Timothy is, perhaps, unrivalled. It is extremely nutritious. Four tons of this excellent hay have been frequently cut from an acre.

It is useful only as a hay grass. It has little or no aftermath; it is not green during the winter. It should never be pastured, as its roots are bulbous, and the plant is easily destroyed by close grazing.

The soil suited to it is the richest of bottom land that is dry enough for wheat. At the South it does not thrive on upland. The well-drained rice land of the coast would produce it in perfection. In our city markets Timothy hay commands a higher price than any other.

This grass should not be sown with clover, as the clover is ready to cut before the Timothy. There must be a loss in one or the other. Timothy should be cut when it is in full blossom. As it is a late grass it has this advantage, that the wheat crop may be saved before the Timothy is ready. Twelve pounds of seed should be sowed to the acre.

HERD'S GRASS.

For hay alone this grass ranks next to Timothy. The soil best suited to it is moist, swamp land. It will grow almost in running water. It yields a valuable return on thinner land than, perhaps, any other of the cultivated grasses. Its chief requisite seems to be moisture. There are large bodies of pipe-clay land at the South which will produce nothing but oats, which will make fair Herd's grass meadows. Of course the richer the land the greater the yield. The hay is good in quality, and sometimes very large in quantity. The grass should be cut just as the seed begins to ripen, and before the stalk has changed its color. Sow a peck of seed to the acre.

Timothy and Herd's grass should be sowed together, as they are ready for the scythe at the same time. This mixture is better than either grass singly. The Timothy will be some

eighteen inches taller than the Herd's grass, and the mixture of the two will give a heavy cutting close to the ground.

In the preceding description all the forage plants and grasses are noticed which the writer believes are practically useful at the South. A great number of other plants and grasses have been tried by him in a series of experiments running through thirty years, and have been rejected as unsuited to our soil and climate.

TIME OF SOWING GRASS SEEDS.

Experience has proved, so far as the observation of the writer goes, that August or early in September is the best time to sow grass seeds, or about the same time with sowing turnips. There is usually sufficient rain at that season to cause the seeds to germinate. The young plants will have time to make sufficient root to stand the severest cold of winter. When sown at this time there is a gain of a season, as clover, lucerne and several of the grasses if sowed without grain in August, will give a cutting in the following spring. Should there be a failure of the seed, an opportunity to re-sow will occur in the following February.

Grass seed sown late in the fall is liable to be winter killed. If the farmer cannot sow early in the fall, it will be wise in him to defer sowing until the ordinary time of sowing oats. The different parts of the South vary so much in climate, that it would be wrong, perhaps, to specify any particular month or months for sowing grass seeds. The general rule may be stated, the application of which will vary according to locality, that it is best to sow sufficiently early in the fall to avoid danger from freezing, or if deferred until spring, the usual time of sowing spring oats.

SOWING WITH OR WITHOUT GRAIN.

There can be no doubt that sowing grass seed with grain should always be avoided, unless necessity requires it. The objections to this practice are, that it involves the loss of a year in either hay or pasture. As has been stated, clover, lucerne and several of the grasses, if sown early in the fall without grain, will give a cutting or may be pastured in the following spring. If sown with grain, the grass will be of no practical use during the season after the grain is cut. No grass should ever be cut or pastured until after it has gone to seed once. This seeding will secure a full occupation of the soil. Of a wet season, clover and some of the grasses may seed late in the fall after grain is cut, they may then be pastured lightly with

calves or sheep. But the grass is of little value during that entire year.

There is another objection to sowing grass seed with grain. When the grain is cut, the young grass and clover are very tender, having been shaded by the grain. The cutting suddenly exposes them to the sun at the hottest season of the year. There is great danger, therefore, that they will be burned out. If sowed alone the heat affects them gradually, and if the ground is occupied by weeds, these mature and decay slowly, and not until autumn admits the heat of the sun to the young grass.

The justification of sowing grass seed with grain is our present poverty. It may be, and in nine cases out of ten it will be, necessary to manure heavily land to be put in grass. The necessities of the farmer require that the cost of the manure should be repaid the first year. In that event, he must sow grain with his grass seed, but always remembering that by so doing he loses a year and endangers the grass.

When grain and grass are mixed both may be sowed either in the fall or spring. Or the grain may be sowed early in the fall, as oats among cotton, the grain may be pastured during the winter, and in the spring it may be harrowed, clover and grass seed sown upon it, and then rolled. The grain will be benefitted by the harrowing and rolling, although at the time it may look like destruction.

WHETHER IT IS BEST TO SOW A VARIETY OF GRASS SEEDS.

The only instance in which it is advisable to sow the seed of a single grass or forage plant, are in the case of lucerne, which will not bear admixture, clover in a rotation, or where it is desired to save the seed of a particular grass. Perhaps in all other cases a variety of grass seeds should be sown.

The reasons for this practice are obvious. There are certain grasses which are called jungle or tussock grasses. These do not spread from the root, but grow in bunches, as orchard and meadow-oat grass. It is necessary that some running grasses should be sown with them to fill up the interstices, otherwise broom-sedge, nimble-will, or that pest, the native fox-tail, will take possession.

Again the appetites of the grasses differ as much as that of the serials. That food which one grass rejects another devours. We should imitate nature. If we will take a foot square of land which has been a long time in grass, we shall be surprised to find the number of differ-

ent grasses which it contains. The lesson taught us is obvious. We should sow a sufficient variety of seeds to consume every variety of food, and so to occupy the ground as to keep out all intruders. Unfortunately, the list of grasses suitable to our climate is limited. We should use them to their fullest extent. At the hazard of some repetition the variety of forage plants and grasses and the quantity of seed to be sown is given.

[TO BE CONTINUED.]

For the Southern Farm and Home.

Drilling Wheat.

MR. EDITOR—It may be too late for this year, but I must say a word for drilling wheat, which I see you recommend in your October and November numbers. Not only am I confident that to sow wheat with the drill is far the best way, but I believe that if we were to cultivate wheat exactly as we cultivate corn, we would double our crops in quantity, and greatly improve them in quality. This past year ought to have taught wheat-growers the superiority of drilling, as compared with broadcast sowing. In many cases broadcast-sown wheat brought miserable crops or failed altogether, while in not a single instance within my knowledge did drill-sown wheat fail to produce abundantly. Last winter was a very hard one on wheat in the South. Long rains, heavy freezes, rapid thaws, and then sharp frosts again, caused a great deal of "winter-killing" and "heaving" in wheat and small grain. No damage was done to drilled wheat. The saving of seed alone by the use of the drill ought to be enough to recommend it to all farmers. From three pecks to one bushel put in with the drill are more than equivalent to a bushel and a half sown broadcast.

If wheat is worth cultivating at all, let it be done well. Sow it on the best land, prepare the land in the best manner, select the best seed, sow it in the best way, and cultivate it as it grows to maturity according to the best methods.

I do not, be it understood, recommend any "guano attachments" or "grass seed distributors." I speak only for the wheat-drill. The attachments and distributors are very nearly, if not quite, "humbugs"—at least I have found them so. Neither am I in favor of any particular patent or make. I believe that all the drills sold by agricultural warehousemen are good.

DINWIDDIE.

NEAR PETERSBURG, VA., NOV. 8, 1872.

*For the Southern Farm and Home.***Fences.**

MR. EDITOR—You may be quite right that owners of stock should be made by law to fence in their stock, instead of owners of land being compelled to build fences to keep out the stock, and you certainly are right that the rail fence is most expensive and unsightly. But I see no chance of any change in the law. We must keep up fences, and as we cannot have crops without them, we ought to try to build such as are the best and most economical. I maintain that wherever rough plank can be bought at \$10 to \$12 per 1000 feet, and chestnut, cedar, or heart-pine posts, at eight to ten cents a piece, a post and plank fence is the cheapest, and it certainly is the best, not to mention the saving of land and the neatness of its appearance, as compared with the worm-fence. According to my figures, such a fence will not cost more than \$1.00 per rod. I allow two posts to the rod, a base-board, twelve inches wide, and one inch thick, and three other planks six inches wide by one inch thick. I make the account thus per rod:

Forty-one and three twelfths feet, say.....	50
Two posts at ten cents.....	20
Nails.....	5
Hauling and labor.....	25

\$1.00

I believe that such a fence, with proper care in the selection of the lumber and setting of the posts, would last from thirty to forty years without the cost of an hour's labor per rod for repairs in all that time. In making it I recommend that the bottom plank be nailed on about six or eight inches above the level of the ground, filling up this space with earth, plowing four or five deep furrows on each side the posts, and throwing up the dirt to the fence in the form of a bank.

If you will count the value of the timber in a rail fence, the cost of cutting and splitting, hauling and putting up the rails, you will find that it is between fifty and seventy-five cents a rod, and if you will count the annual cost of repairs to keep it up, which is about one-fourth of the first cost, you will see that in ten years the ugly, rickety rail fence will have cost much more than the neat plank and post fence.

This calculation is, of course, based on the supposition that the saw-mill is easy of access—not more than six miles from the farm.

POST OAK.

November 7th, 1872.

*For the Southern Farm and Home.***Raise Our Own Meat.**

MR. EDITOR—I asked a leading merchant in a large city a day or two ago, why money continued so scarce, and cotton coming in and being sold so fast for good prices? He told me that all the money that had been paid for cotton had been immediately sent to the North, and went to pay for the supplies the planters had consumed during the year; that much more would have to be sent still, and that we had not nearly reached the point where the money could be kept at home. Now, sir, a large portion—the largest portion, I think—has been spent for meat. Is there no way in which we can raise our own meat, and thus keep our money in our own country? I think there is. I think we can raise our own hogs, and if we will only give the matter a little care and attention, can raise them with good profit. I know that I can do it, because I have done it successfully for the past four years. My negroes do not kill or steal my hogs. I have not had any cholera or mange among them, and I have made every winter abundance of meat for the use of my family and laborers, besides having some to sell. "How do you manage?" I hear your readers ask. I will tell them. I do not turn my hogs loose in the woods to forage for themselves, or be foraged on by the gentlemen from Africa. I have large fields of grass, clover, peas and grain for them, with constant supplies of water and salt. I count them every day, inspect them constantly, and so regulate their food as to guard against disease. When my hogs are twelve or fourteen months old, I take them up to fatten; this I do in October or the first part of November. I fatten them quickly, allowing an average of one barrel of corn to each hog, and when killing time comes, my hogs average two hundred and fifty pounds gross, or two hundred pounds net. They average about one hundred and sixty pounds when I take them up, that is, when I begin to feed corn to them. I have tried feeding in the field and in pens, and unless the weather be very severe, I think the former the better way. I find that each bushel of corn makes about fifteen pounds of pork. This gives me a fair price for my corn, gives me better meat than I can buy, gives me all the offal, and gives me, besides, a fine heap of manure to improve my land. I have no occasion to run in debt. I can sell my cotton or hold it as I please, and whatever money I make remains at home. It

does my farm good, too, having the clover, grass, &c., to pasture my hogs. I have found it improves my land very much, and that, taking one year with another, I make more than my neighbors who buy their meat from Cincinnati, and raise nothing but cotton.

A SELF-SUSTAINING FARMER.

For the Southern Farm and Home.

Swindling in the Sale of Fruit Trees.

MR. EDITOR—I concur heartily with the recommendations of the FARM AND HOME as to the planting of orchards on farms. There is no spot of ground on a plantation which, if properly cared for, will pay half as well as the orchard. But it must be a good orchard. The ground must be well prepared, have the right exposure, and the trees must be well planted and at the proper distance. But above and beyond all these considerations, the trees must be selected of the choicest varieties, suited to the soil and climate, and they should be bought from none but nurserymen of established character, who will certainly furnish what they promise. In no case should any body who is about to plant a fruit orchard buy his trees from the tree peddlers, who are wandering all over the country seeking whom they may swindle. In ninety-nine cases out of a hundred, these peddlers will sell trees of the worst quality and untrue to name. They will agree to sell any variety that can be found in the whole catalogue of fruits, having only to attach the label of the desired variety to the worthless refuse of some northern nursery. The swindle is not discovered for three or four years, when the purchaser, who has planted what he believed to be a well-selected orchard, finds that his fruit is worthless, and that his time, money and labor have been spent in vain.

There is but one mode of protection against this cruel deception, and that is, never under any circumstances, to buy trees from a peddler. There are plenty of nurseries whose owners are men of integrity and skill, who will not knowingly deceive their customers. These men generally advertise in the agricultural papers, and their names and address are therefore readily to be found by all who wish to learn them.

There are plenty of dishonest nurserymen, who having propagated thousands of trees which they have found untrue to name, will not correct their mistake, but send out these

pestilent tree peddlers, to palm them off upon the credulous farmers as the best and choicest kinds. Many years ago, before railroads and telegraphs were as numerous and convenient as now, and before agricultural journals were as abundant as at present, I was made the victim of a tree peddler to a large extent. I found out my mistake, but not discouraged, I picked my flint and tried again, buying directly from a nurseryman who would not willfully lie to sell all the fruit trees in the world. I succeeded handsomely, and I rejoice to say that the rude lesson which I learned has been the means of saving hundreds of my friends and acquaintance from being robbed and deceived by tree peddlers. In the same spirit, and with the same purpose, I now address the readers of the FARM AND HOME to warn them against these impostors, who at this season of the year especially are roving in every direction in the South, with handsomely-bound albums, filled with richly-colored plates of all sorts of fruits, and promising to sell trees which will bear exactly such fruit as the pictures represent. They generally say that they are Canadians, but they talk very much like the Yankee. They rarely admit that they are simply drummers for some Eastern nurseryman, but declare that they own nurseries in some Southern State, remote from that in which they are operating. POMONA.

Baldwin Co., Ga., Nov., 1872.

For the Southern Farm and Home.

Keeping Sweet Potatoes.

MR. EDITOR—I have seen a great many ways recommended for keeping sweet potatoes by building fine houses for them, digging out cellars, &c., but I have never found any way so effective as putting them up in banks in the old way. I have never failed to keep my potatoes through the winter, and I feel confident that next summer, if I live, I shall have good sound potatoes for dinner of this year's crop. I put up about fifty bushels in a bank, which is made on a slight elevation of the ground, dug out in a circle large enough for the base of the bed. Over the floor of the bed spread pine or other straw sufficient to cover it; on this pile up the potatoes in a conical shape; cover lightly with straw, and if the weather permits, leave them in this way for a day or two, until the potatoes are thoroughly dry; then cover the bank three or four inches thick with straw (pine straw is the best and cheapest if it can be

had); next put on a layer of pieces of bark, beginning at the base and lapping each successive layer over that below it, as in shingling, leaving a small opening at the top for ventilation. Lastly, cover the entire with earth about three inches thick, packing it with the back of the spade. The opening at the top of the bank though free for the escape of heat in the bank, and for the admission of air, should be sheltered by a board covering so that rain cannot penetrate. In the spring when the weather becomes warm, open the bank, rub off the sprouts, and spread the potatoes on a dry floor. In this way when corn is laid by, sound sweet potatoes may be had for dinner. In making the pile of potatoes, put up none that are bruised or have the skin rubbed off. They will surely rot and infect the sound potatoes. YAM.

PIKE CO., GA., November, 1872.

For the Southern Farm and Home.

The Compost Heap.

MR. EDITOR—The winter is the time to prepare the compost heap—to gather the materials and incorporate them, so that in spring they will be in a condition for the crops to digest easily. It is a work which is easy of accomplishment if it is steadily pursued; but unfortunately it is one which receives but little attention from the majority of Southern planters. There are very few places where the materials for a large and valuable compost heap cannot be collected during the winter months, if we will only take the necessary trouble. The fallen leaves from the woods, all refuse vegetable matter, creek mud and a little lime, will make an excellent compost with stable manure, cotton seed and all other matter which will produce fermentation and decomposition. It is astonishing what a large pile of fertilizing matter can be collected in a short time if attention is given to it every day. Wherever river mud or muck can be had without too much hauling, nothing is better when mixed with slaked lime in the proportion of a bushel of the latter to half a cord of the former. The heap should be worked over well, so as to pulverize and mix the ingredients thoroughly, and when warm weather commences decomposition will take place immediately. We should begin now to gather leaves, trash and muck, and sprinkling the heap as it grows with lime, as already indicated. Leave it until spring, when by adding to it about one-quarter of its bulk of stable manure, cotton seed and such

other vegetable matter as can be collected, it will become one of the richest possible fertilizers. Ashes can be added to such a pile with great advantage, and all the refuse from the kitchen and out-houses, if thrown in to swell the pile, will be of value instead of as now a complete waste.

We should not complain that our lands are becoming poorer every year, while we neglect the means within easy reach to sustain their fertility. We must not grumble because we cannot afford to buy the expensive artificial manures of commerce, and give this as an excuse why we make poor crops, when we allow hundreds of cords of natural manure of the best quality to lie ungathered and unused all round us. One hand and an ox-team put to work now will build up an immense bank of fertility before seed time, which will in harvest add many a bale of cotton and barrel of corn to the crop.

But now is the time to begin. Let no consideration arrest the work. Gather up the leaves, clean out the fence corners, pile up the corn-stalks, haul away the muck from the borders of the branch, burn up the old logs and brush now cumbering the ground, and collect the ashes, mix them all together with a few bushels of slaked lime, making the pile broad and flat on top, and early in the spring add the stable manure and other fermenting matter.

The labor expended will cost very little. The lime can be bought for a few dollars. The result will be a permanent enriching of the land and largely increased crops.

W. R.

November, 1872.

For the Southern Farm and Home.

Oats as Horse Feed.

MR. EDITOR—It is a very general belief among our people that for horses or mules required to do farm work, no food is as nutritive as corn, and that it is impossible "to keep up the stock" on any other kind of grain. This is a great mistake, however. I am satisfied from a long and careful experience in the management of draft animals, that good, sound oats are by far the most nourishing and wholesome food for either horses or mules on a plantation, for the reason that they are more easy of digestion, are less liable to sour, are more readily assimilated than corn in any shape. For instance, I never saw a mule or horse fed on good, clean oats troubled with

colic or flatulency. I allude only to good, clean oats. If they are musty or mouldy they are the worst possible food, and will produce the worst results; but if they are sound and about four or five months old, I am positive that no other food is as good or possesses the same combination of healthful and nutritive qualities as they do, no matter what the work which the animals are required to do.

A horse or mule doing very hard work may be allowed to eat as much as he will without any injury. He should have a little good hay or fodder in addition. For an animal doing light work a less quantity may be given, and good condition will be kept up if they are ground coarsely and mixed with chopped food and sprinkled with a little salt and water.

Corn is the most expensive stock food that we can possibly use. Oats are the cheapest and most easily raised. Even were corn as wholesome food as oats, the latter are preferable in an economical point of view. But were the cost of both equal, I should prefer the oats as the more conducive to the health and serviceability of the stock.

If you deem these views of any value, give them to your readers as the experience of an
 OLD STOCK RAISER.

November 9, 1872.

For the Southern Farm and Home.

Letter From John Plowhandles.

AGRICULTURAL FAIRS.

MR. EDITOR—During the past few weeks I have visited a number of the agricultural fairs in the Southern States, all the way from beyond the Potomac to "away down South in Dixie." I must say I have been very much disappointed, and am compelled to believe that these fairs are no longer calculated to effect the purpose for which they are designed. Either they are on a wrong plan, and the people will not support them, or the interest in agricultural and mechanical displays is "becoming small by degrees and beautifully less." Certain it is that the fairs this year were generally failures, if success is to be measured by the number and variety of articles exhibited, and by the numbers of visitors. There were exceptions, but they were very few.

I have long been of the opinion, Mr. Editor, that the big annual State Fairs are a mistake, because they do not and cannot reach the agricultural masses. The farmers of Maryland cannot afford either the time or the money to

go to Baltimore and spend a week there to see the fair. No matter what efforts the intelligent and enterprising managers of the Agricultural Society may make, no matter how successful they may be in inducing exhibitors to display the fruits of their skill, the condition of the farmers as a mass renders it impossible for them to visit the show prepared for their benefit. And so it is with all these big fairs. The managers play to a beggarly account of empty benches. The crowd whose aggregated fractional currency pays for the performance, is wanting, the exhibitors fail to reach the people who buy their goods, and the whole thing is a failure, and the Society loses largely.

Now, sir, I am in favor of doing away altogether with the big State Fairs. They are too big. Small people cannot afford them. The State Agricultural Societies are endeavoring to promote improved agriculture, encourage mechanical skill and invention, and diffuse prosperity and comfort among our people. Their mission is a noble one, and they can accomplish it, if they will adopt the right means. Suppose that instead of one big State Fair, with its costly buildings, large premium list, and vast outlay of money, they determine to spend their means in encouraging county or neighborhood fairs, which all classes of the people can afford to attend, and will attend, and whither the farmers will bring their produce and their stock, and the farmers' wives and daughters will bring their butter, honey, poultry and needlework, they will then reach the class they want to improve, and will diffuse an interest in exhibitions of the kind which will soon pervade the whole State, and achieve the desired object.

It is possible that at such small fairs the Northern manufacturers may not at first exhibit as largely as they do at the State Fairs. The mechanical display may not be as rich or as various, but let these exhibitors once be assured that by attending the county fairs they can reach the people who buy their machines and "notions"—in other words, that it will pay to exhibit there, and you may rely upon it that they will come. The first thing to be done, however, is to reach the agriculturists, make them take an interest in fairs, get them to compete for the premiums, and comprehend that the spirit of friendly rivalry thus awakened conduces to their enlightenment and material prosperity. This can be done on a small scale at first, and after a while the competition may be enlarged, but large results

must be the consequence of small beginnings. You must teach the alphabet before you can teach to read. We need primary fairs, not university fairs. Establish and foster the former and the latter will follow. Let the State Society be the patron and visitor of the County Societies, bend all her energies to their encouragement, and devote her means to promote the county fairs, abandoning, for the present at least, the annual State Fairs. I feel confident that the masses of farmers share my opinions, and that if the State Societies wish to attain their avowed object, they must change their system. They must come to the farmer before they can persuade the farmer to come to them. Every year the great annual fairs have been less and less successful. This is not attributable to any lack of energy or earnest effort on the part of the managers, but simply to the mistaken system, which aims too high. We are too poor, too ignorant, too well aware of our deficiencies, too bashful, to enter at the university fairs. Help us to establish primary fairs, and encourage us with your money and presence, and we will all go to school and do what we can to "spell up."

JOHN FLOWHANDLES.

For the Southern Farm and Home.

Errors in Mixing Manures.

MR. EDITOR—It is true that our farmers do not pay as much attention to the manure-heap as they ought, but some of those who do make some effort to gather manure and improve their land, make mistakes which often render their labor vain. They think that all refuse ought to be thrown on the manure heap, believing that it will combine and serve a useful purpose. For instance, it is a common practice to throw animal substances, such as offal and fish, on a heap of stable manure. This is a great mistake, for the animal matter will rot much faster than the vegetable, and by mixing them with stable manure this putrefying fermentation is still further accelerated, and a consequent loss of their most important element, nitrogen. Frequently, too, lime is thrown upon a heap of stable manure, because it is supposed that as lime and stable manure are both fertilizers, they will do well together. The effect of lime upon all ammoniacal manures is to expel the ammonia, and thus deprive them of their most valuable property.

It is also a common thing to see farmers haul soil a considerable distance, spread it in the lots over the manure, and haul it back to

the field from which it was taken, under the belief that they are applying a rich fertilizer to the land, when in reality the spreading of the earth over the manure has only retarded the decomposition of the latter.

It is very well to have a manure pile, but it is necessary to manage it intelligently, and understand the chemical qualities of the ingredients, so as to know how they agree together.

Lime may be advantageously mixed with muck, but never with farm-yard manure.

N. P. A.

For the Southern Farm and Home.

Transplanting Trees.

MR. EDITOR—Now is the time to plant out trees in our climate, and as I hope that many will take your advice and plant an orchard this year, I would venture to make a few suggestions on transplanting, the result of practical experience. In the first place, in taking up the tree, care should be taken to preserve all its roots, remembering that these delicate little fibers are the mouths through which the tree is to gather its food, and on which it depends for its strength and health. Then the tree should be planted so as to give these roots plenty of room, just as they had before they were moved. The holes should be dug sufficiently wide, with the sides soft and broken, and not, as is too often the case, like post holes for a fence. The trees should never be planted deeper than they grew in the nursery. The roots, carefully spread out, should be covered with good vegetable mold, never animal manure, and should be firmly imbedded in the soil, so that the winds cannot disturb them. In this way the wounds caused by removal will heal, new rootlets will soon strike out, and when spring opens the trees will grow off as vigorously as if they had never been transplanted. They will be a full year ahead of those planted in the spring. In planting fruit trees, it is well to examine the roots thoroughly, to see if there are any worms hidden round the base. Many a tree has been destroyed by the neglect of this precaution.

All sorts of fruit trees—peaches, plums, apples, pears, figs, cherries, and grapes, may be planted now, and we should add, all sorts of shade and ornamental trees also.

When the weather becomes very cold, the young trees may be effectually protected from any injury from frost, by spreading stable manure on the surface soil above their roots.

DECATUR.

DeKalb Co., Ga., Nov. 13, 1872.

The Horse Disease.

We hoped that the disastrous epidemic which has so suddenly attacked the horses in the Northern States would confine itself to that section, and not spread to the South. We regret to learn, however, that the disease has appeared in Charleston, South Carolina, and in parts of Georgia, and we may therefore expect that it will extend to other States, and that this section will not wholly escape.

Nobody has yet been able to give a satisfactory explanation of the origin or nature of the disease. It is said to have made its first appearance in the Dominion of Canada, and thence to have spread West and South. The Canadian veterinaries attribute it to atmospheric causes, but what those causes are, they cannot explain.

The first symptoms of this terrible epidemic are copious watery discharge from the eyes of the animal, a nasal gleet, and a general sluggishness, succeeded after a little while by a frequent and violent cough. Fever ensues, and the breathing becomes short and difficult. The bowels frequently become constipated, and at this stage the discharge from the nose becomes a greenish yellow as in the last stage of glanders.

The newspapers teem with remedies of all sorts, but we rather incline to the belief that the simplest and most natural remedies will prove the most efficacious. The great characteristic of the disease is a violent cold with high fever, resembling influenza in human beings. Complete rest, a simple laxative diet, protection against exposure to drafts or sudden changes of the temperature, would seem to be the wisest treatment.

The disease, though very severe, has only been fatal in very few instances, and these were caused by neglect in the earlier stages of the distemper. There is no record of death where the animal was immediately treated when first attacked, and allowed to rest long enough after convalescence to entirely recover his strength.

We have collected a number of prescriptions which have been offered by competent veterinaries, and publish them below, so as to give our friends all the information possible, should the disease reach their stables.

In the meantime, as a preventive, we recommend especial care of the horses, not to work them severely, never to allow them to become overheated, to see that the stables are well aired

and cleansed, and to give them, occasionally, warm bran mash.

The *Turf, Field and Farm*, gives the following remedy:

1. Feed warm bran mash twice a day, and take the liquor of boiled flaxseed to mix with the mash.
2. Two ounces of spirits of niter, mixed with lukewarm water, one application daily.
3. A little pure whisky daily, to stimulate, say a half pint.
4. Liniment for external application on throat—one-third hartshorn, one pint sweet oil.
5. Sponge the nostrils with a solution of salt and hot vinegar; also, wash the mouth with a solution of the same. Blanket thoroughly, and a little exercise daily. Wet the hay with vinegar.

Dr. Elliott, of Canada, prescribes as follows:

Prescription, No. 1.—Linseed oil, 1½ oz.; turpentine, 1½ oz.; liquor ammonia fort, 1 oz. Mix all together in a four ounce bottle and apply to the throat if you think necessary to do so.

Prescription, No. 2.—Nitrate potash, 1½ oz.; tartarized antimony, 1½ oz.; digitalis, ½ oz. Pulverize all together and make twelve powders, give one morning and night. P. S.—If they are not very bad, you might omit the last ingredient, namely, digitalis.

The *Buffalo Commercial*, gives the following:

The disease usually runs its course within ten days, and with proper treatment, few, if any, cases ought to prove fatal. Those that do so are usually complicated with other diseases, as bronchitis or pneumonia.

Treatment.—The patient should be excused from all labor, and allowed complete rest. The stables should be clean and well ventilated. Disinfectants may be useful, and in some cases necessary. Either of the following will answer: Carbolic acid, sulphate of iron, or bromo-chloralum. The patient should be properly groomed, and the nose and eyes frequently sponged with water, and the limbs, if cold, bandaged. The drink should have the chill slightly removed, but not enough to make it warm and unpalatable. The diet should be light, and of a laxative nature; say, short feed or bran wetted or scalded, with a little salt added. Hay in limited quantities may be allowed.

In regard to remedies, I wish to say that heroic treatment should not be tolerated. Blood-letting, cathartic nauseants and arterial sedatives are all of them either injurious or uncalled for. Next, whatever medicines are administered, should not be given in the form of draughts or drenches, as the animal is sure to be thrown into a paroxysm of coughing the moment the drench is attempted, and some of the medicine will, in such event, be almost sure to find its way into the windpipe and bronchial tubes, thus inducing fatal bronchitis or pneumonia. Balls should not be given, as they will be coughed back or out, and the irritation of the throat will be increased in attempting to

pass them over with the hand or fingers. Powders are well-nigh useless, as, when mixed with the food, the patient will usually refuse both food and powders. Electuaries, syrups, or pastes, are the only forms in which medicines may be safely and successfully administered in cases where the throat is tender and irritable, and coughing easily induced.

Saline medicines I regard as the most useful in this disease. Either of the following will answer: Chlorate of potash, muriate of ammonia, or hyposulphite of soda. As an anodyne to relieve the cough fluid extract of belladonna may be added. The proper dose of either of these medicines may be rubbed up with two or three ounces of honey or molasses, and these poured in the mouth from a small bottle, or placed on the tongue with a spoon. Given in this way the medicines will be readily lapped up and easily swallowed. But little trouble is required to give it, and no danger of getting any medicine in the trachea will be incurred by this method.

For the Southern Farm and Home.

Raising Hogs.

MR. EDITOR—I am one of those who think we can and ought to raise our own meat, and that there is no excuse for one of us buying a single pound from Porkopolis. But I am a believer in attending to small things, although "King Cotton" has no more devout worshipper than I am.

I will tell you how to raise hogs, and make pork of them the same year they are littered. If you think my plan worthy, print it if you will, if not, throw these pages in your wastebasket. I will not get mad, but will think I am right all the same.

All pigs intended for the knife should be littered in March, or the latter part of February. Roast and eat or sell all that come in the fall. Feed the sows generously until the pigs are weaned, and then feed the pigs well until you can turn them into a clover lot, which every hog-raiser should have expressly for the purpose.

After they have eaten off the clover, not too closely, turn them into an oat-lot, also prepared for them, as soon as the oats are in the dough. When they have eaten these off, they can be made good gleaners of the wheat fields. Then from patches or fields planted at intervals for their use, give them plenty of green corn, stalks and all, scattered on the ground. This corn will last them till frost, allowing one acre planted early and one in June, for twenty-five hogs. When this food is eaten up, put up the hogs either in a pen or a lot (the latter the best) to fatten, and give them plenty of food,

the best you have, with plenty of good clean water. By the first cold spell in November they will be fit to kill.

This is the cheapest, easiest and best way I know of raising our own meat. It only wants a little provision.

SPARE RIB.

Near MOUSE CREEK, TENN., NOV. 5, 1872.

Wool and Mutton Raising in the Southern States.

We copy from the *Rural Alabamian* the following sensible practical views of the Rev. J. T. Spencer, as to the profits and advantages of raising sheep for wool and mutton in the Southern States. This is a subject which we have frequently brought to the attention of our readers, as one of the many improvements in our present system of farming which we could adopt with benefit to our lands and to our pockets.

We do not recommend engaging in sheep husbandry on a large scale, because it is not generally practicable; but there are few farmers in our country who could not keep a small flock of sheep and make money by the operation—getting a good price for the wool, with very little chance of any great change from present prices, having a ready market for the wethers and lambs, providing a wholesome food for the family at little cost, and fertilizing the land in the best possible manner.

The following is the article to which we have referred:

"The annual increase of population in the country requires the wool from three hundred millions of sheep; so that to clothe the increased population would require an annual increase of sheep equal to four millions. But when we come to consider that there is now an annual deficiency of over seven million pounds, there can be no doubt but that wool-growing is the best stable pursuit that can be engaged in. We cannot glut the market, nor will there be any long time that the market will be depressed below a point of profitable production. On the contrary, it is certain that no farm product goes less below this point than wool. It has long been a source of wonder to me that so many farmers in the Southern States neglect the sheep for the very precarious business of cotton-growing. Every year will give them a crop of wool, if they do but take care of their sheep; but there is no certainty for cotton, prepare the ground ever so well. If we have been rightly informed, the cotton raised in the South has ever cost the planter more than he has obtained for it in market. Too much dependence has been placed upon this most uncertain and expensive crop.

I have tried cotton growing upon probably as good a cotton farm as can be found in Tennessee, and I have also tried sheep upon the same farm; and I am free to confess that I can raise a given amount of money quicker and much easier with a flock of sheep than with cotton. But I find it well to raise both sheep and cotton, as by that means I get a better profit than to be confined to either alone.

Every good farmer keeps a few good sheep at least. Very many who have been in the habit of putting up a large quantity of pork for summer use, now select out a few wethers and give them extra keep, so as to make their summer meat of mutton—decidedly the most healthful that can be used—and thus realize the money for their pork fresh. The inducements to grow more wool are, a sure market, less fluctuation from the point of profitable production than any farm product, a larger interest or profit on the capital invested than any other business—and therefore the best business, as a general thing, that the farmer can follow.

In the out-of-the-way regions, where there is no good market for mutton convenient, I would recommend the finer woolled varieties for their fleece; but near the large cities, where there is a constant demand for the carcass, there is certainly great profit in the coarser woolled and larger kinds; and they are generally more hardy and vigorous in growth than the others.

As already intimated, sheep convert every species of vegetation into money. They eat almost anything that grows, and that part of it which is not convertible into flesh or fleece, drops upon the soil as a most excellent fertilizer. A flock of sheep will enrich a piece of poor land quicker than anything else I know of.

There are many grasses that may be profitably grown in the South for sheep, but for permanent pasture none are better than Bermuda. I know of old and poor districts in Tennessee which had been rendered almost equal to the famous Kentucky blue grass regions by it, and I learn that the same is the case with many portions of Georgia and the Carolinas."

For the Southern Farm and Home.

Cure for Colic in Horses.

MR. EDITOR—Simple remedies, or those which the ordinary farmer can procure readily in case of need, are the best for the common ailments of his stock. Colic in horses and mules is a complaint of frequent occurrence, and many a valuable animal is lost for the want of knowing what to give him. Let me give a remedy for colic which every one can prepare for himself, and will not cost a cent. Take a couple of handfuls of the leaves of Jamestown or jimson weeds, boil them down so as to make a strong tea, and when cool drench the sick horse or mule with it. I have seen it tried and succeed when it was thought the animal was about to die. V. S.

DrSoto Co., Miss., Nov. 11, 1873.

Address of Gen. Wade Hampton,

AT THE FREDERICK COUNTY, MARYLAND, FAIR,

On October 16th, 1872.

MR. PRESIDENT AND GENTLEMEN: The fact that your society, which represents so largely the numbers, the wealth and the intelligence of the agricultural population of Maryland, has chosen me to address you on this occasion, suggests reflections which are not without significance. That the farmers of Maryland should call upon a cotton planter of the far South to speak to them of agriculture, may seem at first sight inconsistent, if not absurd. But such in reality, is not the case, and to me your action in this particular shows more plainly than any words could tell, that you are actuated by that true catholic spirit which recognizes the great agricultural elements of the whole country, as composing one grand and noble brotherhood—a brotherhood which is bounded by no sectional limits, which is trammelled by no political shackles, and which clasps in its fraternal embrace all who earn their bread in the sweat of their faces. Nor is your action in this matter without a precedent in the annals of this society, for my distinguished predecessor, in the discharge of the honorable duty I am now performing, was called from his farm at Chappaqua to tell you not alone what he knew about farming, but to speak those words of peace and conciliation which have, like bread cast upon the waters, returned to him after many days, bringing with them the good will and blessings of thousands. Let me hope, then, that though my experience in farming may be of little benefit to you, you will at least recognize me also as belonging to and proud of our ancient and honorable brotherhood. In the discharge of the pleasing duty your kindness has imposed on me, it will scarcely be expected that I should enter into the details of farming or of planting, for this, to an audience composed of intelligent agriculturists, would be a work of supererogation. The farmers of Maryland need no instruction as to the mode of growing wheat and tobacco, and none as to the proper development of all the resources of their fair and fertile lands. Nor would they be interested in hearing how the rice of Carolina, the cotton of Mississippi, and the sugar of Louisiana are cultivated. It seems more appropriate on an occasion of this sort to discuss those great fundamental principles which underlie and should govern all agricultural operations, whether in Maine or in Florida, and to consider the means by which we can place the agricultural interests of the country in their proper positions. To the consideration of these points I shall, with your permission, address myself, in the hope that I may aid somewhat in drawing into warmer sympathy and closer union these great interests, while I offer, at the same time, some suggestions which may tend to consolidate them for their mutual protection and advantage. In a country such as this is, which embraces within its broad

limits every variety of soil and climate, the systems of culture must necessarily be as diverse as are the products of the earth. No particular system will apply to every locality, and to all crops; but there are certain general rules which should obtain in all agricultural operations, and the observance of these can alone entitle the tiller of the soil to rank among intelligent and successful agriculturists.

Of course the essential elements of prosperous farming are those which command success in all other avocations—honesty, temperance, frugality, and industry. Possessed of these cardinal virtues, and aided by intelligence, energy and application, any man may reasonably hope, not only to be successful as an agriculturist, but to take his place among those whose proud title it is to be called the benefactors of their race. Every farmer who has a proper pride should aspire to be more than a mere tiller of the soil, whose only knowledge consists in his ability to hold the plow, and to reap the fruits of his manual labor. In these days of enlightenment and progress, when science has become the handmaid of agriculture, if we hope to keep pace with the advancement of the age; if we wish to give proper dignity to our calling, and success to its operations, we must use all the means and appliances which scientific researches have developed, and mechanical genius has offered. It is, of course, not to be understood that, in recommending every agriculturist to seek the assistance of science and skill, I expect him to become a practical chemist or a skilled mechanic. The knowledge that would qualify him to be either the one or the other of them, would doubtless be of great value to him in his own profession; but it is not essential that he should possess these acquirements. It will be sufficient to him if he has the intelligence to recognize the importance of these auxiliaries, and to use them advantageously. This he can only do by making himself a thorough master of his business. He must know not only all the practical details of that business, but the laws which control its operations; not the effect alone, but the cause. Without this practical knowledge no theoretical attainments will be of any avail. It is doubtful if even Sir Humphrey Davy himself, whose comprehensive mind first taught the value of chemistry to agriculture, could have applied successfully these great principles he discovered and announced, for lack of that experience which every intelligent farmer possesses; but he has, nevertheless, by placing the result of these discoveries within the reach of every one, conferred incalculable benefit, not on agriculture alone, but on all those great and varied interests depending on it. Whitney was not a cotton planter, and yet it is probable that no other single invention has added so much to the wealth of the world as his of the cotton gin has done. These examples are used merely as illustrations to show the importance of calling to the aid of agriculture the discoveries of science and the inventions of mechanical

genius. If this is the correct view of the subject; if it is desirable that the agriculturists of this broad land should, instead of being mere hewers of wood and drawers of water, exercise that controlling influence in the affairs of the country which their number, their intelligence, and their power should give them, the question arises, How can they attain the desired end? Before endeavoring to answer this question, let me ask your attention to a few facts, which show that the great agricultural and mechanical industries represented in part, by us, have the right to claim the first rank among the vital interests of the country, and the power to enforce that right. But few of our people, and only those who have considered this subject, realize the importance of the agricultural element of the country to the body politic, or the magnitude of the contribution made by it to our general wealth. In order to present this matter to you with the force its importance demands, I beg to give the words of one, of whom our people may well be proud; whose genius has benefitted the world, while it sheds a luster on his native South—our distinguished fellow-citizen, Commodore Maury. In a recent address, fraught with the earnest patriotism and the deep wisdom that mark his utterances, he refers to this subject in the following language:

"According to the returns of the census of 1870, as far as I can see, and as well as I can understand, there are in the United States, using round numbers, 12,500,000 bread-earners. These twelve and a half million subsist the nation with their labor; they give food, shelter and raiment to the thirty-nine million of souls that inhabit this country. Thus you perceive that every bread-earner has on an average to fill a little more than three mouths. Now consider the other great interest of the State, and the power acquired by them in combination. The manufacturers, including operatives and servants, earn bread for 1,117,000 souls; commerce, including merchants, shopkeepers, clerks, peddlers, hucksters, bar tenders, sailors, etc., earn bread for 2,336,000 souls; railroad and express men earn bread for 593,000; miners for 472,000. So it comes to this, according to the census, while agriculture and mechanics fill ten times as many mouths as commerce, twenty times as many as manufactures, forty times as many as railroads, and, fifty times as many as mining; yet the least of these, by co-operation and management, exercises three times the influence in the country and thrice the power with the Government that you do—all for lack of the proper spirit among farmers to work and pull together."

These facts and figures offer food for deep reflection. They show that agriculture, with its kindred arts, furnishes the life-blood of the country; that in the face of this great fact it has received at the hands of the Government less encouragement than any other branch of industry, and that the weight of power it could wield in its own protection has been rendered useless, for want of organization and concert of action among its followers. When

we consider these facts, and remember that the contribution made by agriculture to the wealth of the country amounts to not less than \$2,000,000,000 annually, we surely have reason to demand that this great industry should take the first place among the interests of the country, and that the influence of its followers should be recognized. Bearing these significant facts in mind, facts which show how necessary, not to the prosperity alone, but to the very life of the country, are the agriculturists, and how potent is the power they can at will exercise, let us consider how that latent power may be made available. Now, gentlemen, if the great body of the agriculturists constitute, as we claim they do, the bone and sinew of the country; if they produce the wealth that gives us prosperity and power; if they hold in their own hands the grand lever that moves the world, how happens it that the industrial interest, represented by them, is so powerless for its own protection? This is a pregnant question, and on its proper solution depends the future prosperity, not of our agriculturists alone, but of this dear fatherland of ours. Looking with the anxious solicitude of a patriot, and the filial affection of a son, to the future of this fair land of ours, which is well worth all the devotion and sacrifice her sons have shown in her behalf, it seems to me that the immediate and pressing needs of the South are proper education for her sons; capital to develop her abundant resources, and immigration to make her waste places blossom like the rose.

These are the three great wants of the South, and to meet them we should devote every energy of mind and body. Can we supply these wants; can we lift this bleeding and desolate land of ours from the dust and ashes in which war has left her, and put her, as of old, in her proper position of strength, of eminence, and of prosperity? I answer, unhesitatingly, yes; if her sons will but show in this dark day of her distress the devotion, the zeal, the patriotism which have marked them in the past; if they will still prove themselves worthy of the land that gave them birth, the land that has been hallowed by the noblest sacrifices ever offered—the blood of her patriot sons, the tears and prayers of her devoted daughters—the purest libation ever poured out on the altar of liberty. The people of the South have proved that they were equal to any fate, and in their hands, under the providence of the Almighty, now rests the future of their country. God grant that they may bear all trials with unshaken faith and untarnished honor, and may He who holds all nations in the hollow of His hand give to them at last, in His infinite mercy, the richest blessings of peace, prosperity, and happiness. But, before we can hope for these blessings, we must prove ourselves worthy of them, and we can only do this by dedicating ourselves to the service of our country. We must put our shoulders to the wheel before we can expect aid from above, and, if we do this in a true and manful spirit, the result cannot be doubtful. But this digression, for which I crave

your pardon, has led me from the main points under consideration—the wants of the South and the means to fill these wants. Of the three pressing wants, the lack of proper education among our people, especially among the great body of our farmers and planters, has been specified as the first and most serious. I am not one of those who measure the virtue and intelligence of a people by their ability to read and to write. There is as much truth as poetry in the aphorism:

"A little learning is a dangerous thing."

The fatal mistake of the age, at least in some portions of this country, springs from the prevalent belief that mere intellectual training is of itself sufficient for all the purposes of this life, without that better education of the moral sense, which can alone teach man his duty to his neighbor and to his God. In the ceaseless and unseemly struggle for place and riches which is debauching the moral tone of so large a portion of the population of this country, all true education is neglected, and many young men are launched on the sea of life, with intellect sharpened at the expense of all the higher faculties, which are left undeveloped and uneducated. The wild pursuit of wealth as the only object of life—"the cursed greed of gold"—leaves no time for the proper training of heart and soul, and too much of what is falsely called education has for its sole end to impart only such knowledge as will qualify its possessor to enter the mad race for power, wealth and other mere temporal blessings. The caustic words of the Roman satirist, describing that education which teaches that money is the chief good, are sadly applicable to many of our youth, who are taught in the same school.

"Isne tibi melius suadet, qui rem facias; rem, si possis recti; si non, quocunque modo, rem."

"Make money; honestly if you can, but, if not honestly, make money by any means."

It is this pernicious teaching that is making so many of the people lose their ancient and hardy virtues, and it is against this abuse of all high and true education that I now protest, not against education itself. It is undoubtedly a good thing to know how to read and write, but the mere possession of these rudiments of education profits a man but little, unless his nobler faculties are directed in the proper way; and it is a mistake to suppose that because he can read and write he is a better man or more intelligent citizen. The Athenians, it may safely be assumed, though the great body of them were without these acquirements, were quite as well versed in literature, science, politics, and the polite arts, as the people of New England, whose boast it is that their system of free schools has diffused education more generally among the people than in any other country; and the experience of every thinking man in the South will bear me out in the assertion that in all the elements which go to make up true manhood—honesty, truth, honor, faith, courage, aye, and intelligence—our own people, all unlettered as many of them are, have proved themselves, in war as in peace, at least

the equals of those who pride themselves on their superior education. But while these are facts which cannot be successfully controverted, it does not follow that a proper education, a development of the full powers of body, of mind and of heart, should be neglected, and it is in behalf of this higher and nobler education that I now appeal to you, and through you to the people of the South. This is the "one thing needful," and when we meet as we do now, for consultation, it is the duty of each one of us to offer such suggestions as may, in his judgment, ameliorate the condition, and advance the interests of our people. Actuated by this motive, let me call your attention to the mode which strikes me as most efficacious in meeting this want of our people for adequate and wholesome instruction. The plans which seem to promise the speediest and happiest results consist in the establishment and liberal endowment of agricultural colleges throughout the whole South. This system is practicable, and experience has shown, wherever it has been tried, it has effected infinite good. Prussia, which, since the days of the Great Elector, has evinced a constant solicitude in the cause of popular education, had the wisdom to inaugurate these beneficent institutions, and to them she owes much of that success which so lately bore her eagles in triumph to the gates of Paris. Her example has been followed by most of the States of Europe; and the New World, walking in the footsteps of the Old, is rapidly erecting these noble seats of learning, especially in the North and Northwest. It is a source of regret, if not of reproach, to us, that we of the South have made such slow progress in this direction; but it is to be hoped that a new era is about to begin, and that soon in every Southern State one or more of these admirable institutions will place within the reach of all our people every facility for the acquirement of proper, useful and honorable education.

Until recently there were in the South but two colleges which offered the facilities for the acquisition of agricultural education, and as honorable exceptions to the general rule they deserve not only commendation, but the thanks of all who have the welfare of our people at heart. One was the flourishing Agricultural College of Kentucky, which is appropriately located at Ashland, the home of her great and patriotic son, a fit and noble monument to the memory of Clay; and the other was at the Washington College, of Virginia, where, on the urgent recommendation of its great president, a department of applied science, embracing agriculture, commerce, engineering and mining, was established in 1868. This was almost the last work of our great captain, in his self-imposed task of "training young men to do their duty in life," and as such it should be dear to the people of the South. It was his earnest desire to make the institution over which he presided worthy of the name it bore, of the State which fostered it, and of the people whom he had loved and served so well. He was aware of the importance of agricultural

education, for, as he expressed it, "Agriculture is, at present, the most important interest of the Southern people, and must continue so for years to come. No effort should, therefore, be spared to advance it, and to extend to it all the advantages which science has bestowed on manufactures. The great object of the whole plan is to provide the facilities required by the large class of our young men who, looking to an early entrance into the practical pursuit of life, need a more direct training to this end than the usual literary courses." These were the comprehensive and patriotic views which influenced him in his effort to promote the cause of true education in the South, and let us hope that in the coming years the descendants of the men who fought with him under the starry folds of the Southern cross may reap in each harvest the fruits of knowledge placed within their reach by his wise foresight, and we may be sure that they will do then, as their sires do now, invoke blessings on the honored name of Lee. These two colleges were the leaders in the movement to give in the South, to agriculture, all the aid that science could bring, and the praiseworthy example set by them has been generally and successfully followed. Virginia, that grand old commonwealth, which is never a laggard when fame is to be achieved, honor won or public good accomplished, has already, besides the Washington-Lee University, two institutions offering all the means of obtaining a thorough agricultural education, one of which is the college that has recently been established under favorable auspices at Blacksburg, and the other is her justly famous university at Charlottesville, where a department of industrial chemistry, civil and mining engineering and agriculture, all the elements of general education, has been organized with a corps of able professors. The addition of this department makes this celebrated Southern university one of the noblest and most complete institutions of learning in this country, and renders it still worthier of its great founder, who had the wisdom to provide at its organization for such future changes and modifications as would adapt it to the spirit of the age and the necessities of his countrymen.

Already has this new school of agriculture borne good fruits, and the investigations and analyses of some of its scholars have received favorable mention by the Royal Society of Great Britain and the British Association for the Advancement of Science. Of the young men distinguished by these societies, South Carolina claims Mr. Jas. B. Adger as her son, and Mr. Frank P. Dunnington, of Baltimore, reflects equal honor upon his State—Maryland.

This system—which has been adopted by the University of Virginia, of adding to its various schools one expressly designed for agricultural education—seems peculiarly happy, for by it this institution can offer to all young men facilities for the acquisition of knowledge in departments scientific, useful and practical. By these means a student may fit himself for any particular avocation, while, at the same time, he can acquire all the elements of general edu-

cation which may be necessary to him. But as all our universities and colleges may not have the power to adopt this plan, it will be well for us to use every effort to build up agricultural colleges and schools where our young men who have not the time nor the means to seek a full, liberal education may be able to obtain instruction. If these institutions are laid on a proper foundation, and are wisely conducted, they will give to every young man the power to win his education by the labor of his hands, thus teaching him at the outset of life the two great lessons that all honest toil is honorable, and that it can never be better employed than in the struggle to acquire true and useful knowledge.

Most of the Southern States—yours among the number—are working zealously to establish their colleges on a firm footing, and it is the duty of every man who desires the enduring prosperity of his country to give all the aid in his power to ensure their success. No higher object can inspire the heart of the patriot than that which seeks to place within the reach of all the greatest blessing of a true and good education, and no nobler charity can be bestowed by the hand of wealth than to aid in this patriotic work. A noble example has been given in Virginia, where the agricultural department of its university was founded by the munificent donations of two liberal sons of that State—Messrs. Miller and Johnson—who gave \$140,000 to establish this school, and if those who are blessed with riches will, like these munificent patrons of learning, apply a portion of their wealth to promote the cause of education in the South, they will not only confer an inestimable blessing on their country, but will be laying up “a treasure in the heavens that faileth not, where no thief approaches, neither moth corrupteth.” The Congress of the United States, who, hitherto, has used its powers not to foster the great agricultural interests of the country, but, apparently, only to depress them, by the imposition of unwise, if not unlawful, exactions, seems, at length, disposed to lend to us a helping hand, and its action in bestowing portions of the public lands in the States to aid in founding agricultural colleges, though a tardy act of justice, was wise and judicious. It is, however, a source of infinite regret that, in the case of many of the Southern States, this magnificent endowment, which, if honestly used, would be productive of such vast good, has fallen into the hands of those harpies who are draining the life-blood of the South, and that it constitutes with them only another fund for pillage. We can only hope that the time is not far distant when the local governments of these oppressed States restored to rightful hands, this great fund will be as faithfully applied to its legitimate use as it has been wisely appropriated. Until this auspicious time does come we can only strive earnestly to save intact, as far as may be, this trust, sacred to the cause of education, and to prevent its falling into those capacious and elastic receptacles, which already hold most of the wealth of the plundered South—the carpet-bags of our imported authorities. If we are so fortunate as to save

this fund from the attacks of these traveling chevaliers of industry, it will serve to endow one or more agricultural colleges in each of the Southern States, thus inaugurating a system, which, if properly fostered by the States themselves, will give to all our people every facility for acquiring useful, proper and wholesome education. We will then have discharged our first great duty to our people—that of placing in their hands the best weapon with which to fight the battle of life; the weapons which a true education, whether it be obtained at the mother's knee, or in academic halls, can alone furnish; knowledge, integrity, justice in our dealings with fellow man, dependence on and faith in God. Place these mighty weapons in the hands of our young men—the future hope of the country—and then bid them, hopefully and prayerfully, “God speed.” Teach them that all honest labor is honorable—that so far from being inconsistent with it, it adds to manly dignity and true greatness. Elisha was taken from the plow to declare the inspired word of God, and Cincinnatus to save his country. Are not the names of Fulton, Whitney, Arkwright, Watt, Stephenson, worthy to be enrolled not only among the benefactors of mankind, but among the great of the earth? When Ferguson, while tending his herds on the bleak hills of Scotland, learned to read all the wondrous mysteries of astronomy, and to find in the course of the planets that none but an omnipotent hand could guide them in their orbits; and Miller, who working at his lowly trade, taught himself to trace in the wonders of geology the finger of the Almighty in the creation of the earth, did they not give evidence that the highest intellectual endowments are not inconsistent with the humblest occupations? Examples such as these should be held up to our young men, to teach them that the learned professions, honorable as they are, do not offer the only avenues to usefulness, to fame or to greatness, that these high prizes are open to all, whatever may be their condition in life, who prove themselves worthy to win them. When the great need of the South for proper education is fully met, we shall find but little trouble in filling the other two wants to which allusion has been made—capital to develop her resources, and foreign immigration to fill up her vast and prolific domain. These two subjects are so closely connected that they may be discussed together, for if we can succeed in directing to our shores the great tide of immigration flowing constantly toward this Continent, we shall bring with it all the capital needed.

How can we divert this great tidal wave to our shores, and what influence will it exert if we succeed in turning it hitherward? The census of 1870 shows that the total immigration to this country during the four years preceding the war, amounted to 649,354, and in the four years immediately succeeding the cessation of hostilities, the number reached 1,163,128. Taking these latter figures as data, we may assume that there is an influx of a quarter

of a million of foreigners annually. When it is remembered that each emigrant brings eighty dollars in specie, we can appreciate the vast accession to the wealth of the country from this source. Add their labor, and we may put the contribution to the general wealth made by them at not less than one hundred million of dollars annually. Can we not make the South share more liberally than she has hitherto done in this unfailling mine of wealth, and if so, how are we to do it? The great stumbling block which has so constantly stood in the way of successful efforts in this direction is the profound ignorance which prevails abroad, in reference to our country and our people. While much of this ignorance has sprung from persistent and malicious misrepresentation, our own skirts are not clear of blame in this matter, for we have made no earnest and united effort to set ourselves right in the eyes of foreign nations. Knowing the falsehood of the slanders which have been so unsparingly launched at the South, and confident in the rectitude of our purposes, we have been indifferent—too much so, perhaps—to the public opinion of the world; but it behooves us now to prove that we have been harshly judged in the past. The first step then, that we should now take, and it is one dictated no less by duty than by policy, is that we should remove the prejudice which exists in Europe against the South. To do this effectually, there must be an organized plan and concert of action among all the States interested. It will be vain for any one State to make the attempt singly, as the experience of the last seven years has shown.

We can hope for success only from united action, and this must be brought about mainly by our agricultural associations. Through these agencies, the agricultural and mechanical industries of the South can be brought into consultation, and such steps may be taken as will enlighten Europe as to the true condition and the wonderful resources of the South. An agricultural congress, which would represent fairly and fully the two great interests just mentioned, could not only organize wisely and authoritatively a plan of action, but it could by its own power and respectability exert a vast influence in promoting immigration. It could, for instance, prepare documents which should be translated into every language of Europe, showing the topography, the climate and the products of the South; her vast and undeveloped resources; her teeming soil; her genial skies; her boundless treasures of mineral wealth, rich as the mines of Golconda or the unnumbered sands of California; her water power, which could drive all the machinery now on the earth; her noble rivers, and her magnificent harbors, which can float the fleets of the world. In addition to these inducements to the immigrant, it can be shown by a comparison of the vital statistics of the different countries that no climate is more salubrious than that of Maryland, Virginia, the two Carolinas, Georgia, and parts of Alabama, Mississippi, Texas and Florida, in which a

large portion of the cotton belt of the United States is embraced, and that in this prolific belt the white man can labor without danger to his health, reaping from his labor the richest returns. Let facts be given to show that cotton, corn, wheat, tobacco, oats, rye, barley, sorghum, the ramie plants, can all be grown here with profit, while the soil and the climate of the whole South, in their great diversities, seem adapted alike to the production of the frigid North and the fervid tropics.

Here, too, flourish, besides the plants already enumerated, the tea of China, the wine of France, the olive of Italy, and the orange of the West Indies, all offering golden returns for their cultivation.

"Whatever fruits in different climes are found,
That proudly rise or humbly court the ground,
Whatever blooms in torrid tracts appear,
Whose bright succession decks the varied year;
Whatever sweets salute the northern sky,
With vernal lives that blossom not to die;
These here disporting own the kindred soil,
Nor ask luxuriance from the planter's toil,
While sea-born gales their gelid wings expand,
To winnow fragrance round the smiling land."

Accompanying such a representation of our favored land there should be photographic maps, giving the striking features of the country, its farms, its forests, its mountains, its cities, and its railroads. In order that the information these documents are meant to convey may be properly disseminated among the people of the old world, we should have accredited agents in every portion of Europe from which desirable immigrants may be expected, and these should be men of recognized reputation and acknowledged ability.

These ambassadors from the South, if I may call them such, could not only give all information in regard to our country, but they could tell the character of our people, and in the name of that whole people assure all who wish to make their homes at the South of a cordial welcome. By the adoption of some such plan as has been indicated we should have every reason to hope that a fair proportion of the immigrant population would be turned toward the South, and this population would be regularly increased, as every settler would become an active agent in bringing others. As soon as the tide of immigration has set steadily in this direction, we shall reap, besides the increase of population, another advantage of incalculable benefit—the establishment of direct trade with Europe. This result must inevitably follow, as our immigration will bring abundant capital. Capital, by developing all the resources of the country, will increase the merchantable products of all our varied industries, and these, seeking the best markets of the world, will open to us, what the South has so long struggled to obtain, a direct trade.

Gentlemen of the society, the task with which you honored me is fulfilled, all imperfectly it may be, but with an earnest purpose to contribute my feeble aid to the good work in which you are engaged. It has been my aim, in discharging it, to bring to your notice the wants of the South, to offer a few crude

suggestions as to the best mode of meeting those wants, to show you how goodly a heritage is yours, and to urge you, for the sake of this dear land of ours, to quit yourselves like men. A sacred duty is before you; a noble reward awaits the fulfillment of that duty. It is yours, men of the South, to build up anew the prosperity of your country, to develop her hundred resources, to teach the rising generation to cling with unshaken faith to the ever-living principles of truth, of justice, of liberty, to bind up the wounds that savage war has inflicted, and to "scatter plenty o'er a smiling land."

Are other incentives to action needed? If so, I adjure you, in the name of that prostrate country, by the graves of your fathers, by your duty to your children, by the love of these noble women who share your fate, by all the hallowed memories of the past, by all the sacred duties of the present, by all your dearest hopes of the future, to dedicate yourselves to the redemption of the South. Prove to the world that, despite the storm which has "scattered her might and shattered her shield," she yet has loyal and devoted sons. Yield not to unmanly despair, but strive zealously to make the future bright and glorious. When Pericles was bewailing the heroic dead of Athens he exclaimed, with touching pathos: "Our youth hath fallen in battle. It is as if the year were deprived of spring." This is the case with many of us, and as the dreary years drag their slow lengths along, it seems as if they had lost their spring-time. But it may be that Time, in his ceaseless revolution, will bring to our children, if not to us, other years rich in all the glories of a perpetual spring. Let us, then, be true to ourselves and to our country. Let us cling with reverence—a reverence made deeper and holier by her misfortunes—to our native land, and let no promise of wealth or advancement tempt us to forsake her. When the barbarian horde destroyed Rome, and her sons, in despair, were about to forsake the Eternal City, we are told that the impending misfortune was averted by a happy omen. A centurion, moving with his company on the accustomed round to relieve guard, halted near the sad concourse, who were deliberating on the proposed abandonment of the city, and gave the usual words of command: "Ensign, plant your colors; we will remain here." The Senators, rushing from the temple, exclaimed: "The gods have spoken; we obey." The populace caught up the cry, and rent the skies with shouts of "Rome forever." Let us, my countrymen, as we stand amid our ruins, flaunt our colors inscribed with Hope and Faith on the graves of our ancestors, and invoking reverently the protection of our God, shout with more than Roman patriotism with one voice, "The South now, the South forever." [Prolonged applause.]

The sourest temper must sweeten in the atmosphere of continuous good humor.

The laws keep up their credit, not because they are all just, but because they are laws. This is the true foundation of their authority.

Scientific Department.

New Applications of Electricity.

An ingenious application of electricity to commercial purposes has lately been made by an Italian gentleman, M. Eugenio de Zuccato, of Padua. By means of the invention, any number of copies of a manuscript or design, traced upon a varnished metal plate, may be produced in an ordinary copying-press. The *modus operandi* is very simple. To the bed and under plate of a press are attached wires leading from a small battery, so that, when the top of the instrument is screwed down, the two metal surfaces come into contact, and an electric current passes. An iron plate resting upon the bed of the press is coated with varnish, and upon this surface is written with a steel point, any communication it is desired to copy. The letters having thus been formed in bare metal, a few sheets of copying-paper are impregnated with an acid solution of prussiate of potash, and placed upon the scratched plate, which is then subjected to pressure in the copying-press. An electric current passes wherever the metal has been left bare (where the writing is, therefore); and the prussiate solution acting upon the iron, there are found prussiate of iron or Prussian-blue characters corresponding to those scratched upon the plate. The number of copies that may be produced by this electro-chemical action is almost unlimited, and the formation of the Prussian blue lines is, of course, instantaneous.

Another novel way of utilizing electricity is the employment of the current to saw wood, without a saw. It is a familiar fact that the resistance to the passage of a current is inversely as the sectional area of the conductor. In fine wire, for instance, this resistance is very great, and the arrested force, being transformed into heat, may be sufficient to render the wire white-hot. This is the principle of the various gas-lighting and fuse-firing electrical apparatus, in which the gas is lit or the fuse exploded by the white-hot wire. It has also been employed instead of the knife in certain surgical operations, the wire being found to burn its way rapidly and smoothly through flesh, etc. The latter application has been extended by Dr. George Robinson, of New York city, to cutting wood also, the electrically heated platinum wire proving as effective, without any expenditure of manual strength, as a saw in the hands of a strong man. The surfaces are slightly charred.—*Boston Journal of Chemistry.*

WASHING FLUID.—Dr. Quesneville, in the *Moniteur Scientifique*, describes a mode of washing which has been widely adopted in Germany and Belgium. The operation consists in dissolving two pounds of soap in about three gallons of water, as hot as the hand can bear, and adding to this one tablespoonful of turpentine and three of liquid ammonia; the mixture must then be well stirred, and the linen steeped in it for two or three hours, taking care to

cover up the vessel containing them as nearly hermetically as possible. The clothes are afterward washed out and rinsed in the usual way. The soap and water may be reheated and used a second time, but in that case half a tablespoonful of turpentine and a tablespoonful of ammonia must be added. The process is said to cause a great economy of time, labor and fuel. The linen scarcely suffers at all, as there is little necessity for rubbing, and its cleanliness and color are perfect. The ammonia and turpentine, although their detersive action is great, have no injurious effect upon the linen; and while the former evaporates immediately, the smell of the latter is said to disappear entirely during the drying of the clothes.

ACTION OF HUMUS UPON MINERALS.—

Every one who has studied the growth of plants must have come to the conclusion that it is necessary to look beyond the gases of the air and the carbonic acid water of the ground to account for the power of vegetables to decompose many mineral substances. It is evident that some other acids come into play and exert a decisive influence. Herr Senet, of Eisenach, Germany, has submitted the question to a long series of investigations, and the conclusions at which he arrives are well worthy of the attention of scientific men. The researches of Mr. Senet go far to confirm the shrewd theory advanced by Prof. Henry Wurtz, of New York, that the organic acids have played a much more important part in the formation of rocks and minerals than geologists have been in the habit of conceding. It is evident that plants, while living, are able, by the products of their growth, to act upon insoluble minerals and appropriate certain constituents to their wants, and that, when the plant is dead, it can, during the process of decay, produce acids that either dissolve minerals or render them soluble. The whole question offers a fine field of research to the chemical geologist. —*Journal of Applied Chemistry.*

CHEAP STUMP PULLER.—Have a chain made of the best round charcoal iron, at least one inch and a fourth in diameter and eight feet long, with a ring in each end two inches and a half in diameter; one side of these rings must be formed like a link. Attach one ring to a band of iron, one inch thick, two and a half inches broad, with a small offset for the ring to lodge in. This band should be beveled on the inside edge, to make it slip on the pole readily and prevent cutting it. Cut a nice, straight, tapering hickory, white oak, or locust lever, one foot in diameter at the butt, and twenty-five feet long. Take off the bark and lumps smoothly, put on the band, let it come within two feet of the large end, at which point put in two small pins of iron, to prevent it from going any further. Within four inches of the small end, put on a common ox yoke clevis with a ring in it to pull by. Hitch on two yoke of oxen. Drive on the right of the stump until the band passes the stump, on the left side, and draw it tight with no twist in the

chain. A little above the lever drive in a common wedge, and put the ring on the wedge. Then gee round in a circle, until the stump is twisted out.

This machine will take out about half the dead stumps in a field of long standing, without cutting the brace roots. Common-sized green stumps can be taken out also by cutting the brace roots first and digging a little. After everything is ready, with the team and two hands, I can take up one hundred or more stumps per day, as it is no draft at all on the cattle, except in the labor of pulling the lever from stump to stump.—*Mass. Ploughman.*

PROFESSOR WATERHOUSE, in a recent paper on the resources of Missouri, gives the following description of the iron mountains, for which the State is famous: "Shepherd Mountain is 600 feet high. The ore contains a large percentage of iron. The height of Pilot Knob above the Mississippi river is 1,114 feet. Its base, 581 feet from the summit, is 300 acres. The upper section of 141 feet is judged to contain 14,000,000 tons of ore. The elevation of Iron Mountain is 228 feet, and the area of its base 500 acres. The solid contents of the cone are 230,000,000 tons. It is thought that every foot beneath the surface will yield 3,000,000 tons. At the depth of 150 feet, the artesian auger was still penetrating solid ore. These mountains contain enough ore above the surface to afford, for 200 years, an annual supply of 1,000,000 tons. The iron is strong, tough and fibrous."—*Scientific American.*

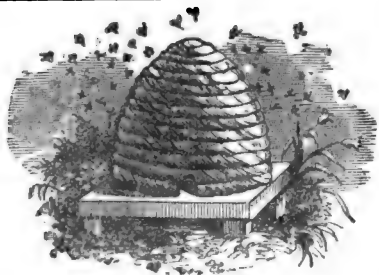
LIME FOR POISONING BY PLANTS AND INSECTS.—A standing antidote for poison by oak, ivy, etc., is to take a handful of quick-lime, dissolve in water, let it stand half an hour, then paint the poisoned parts with it. Three or four applications will never fail to cure the most aggravated cases. Poison from bees, hornets, spider bites, etc., is instantly arrested by the application of equal parts of common salt and bicarbonate of soda, well rubbed in on the place bitten or stung.—*Boston Journal of Chemistry.*

Experiments in Germany, it is claimed, have determined the weight of roots per acre of several of the farm crops. Ordinary stubble with the roots in the first ten inches of soil were separated from the earth and dried. The pounds of red clover root per acre were 6,580; rye, 3,500; wheat, 3,400 pounds. This, of course, remains in the soil as a fertilizer.

PULSE OF VARIOUS ANIMALS.—The pulse of our domestic animals, as given by Vatel, in his Veterinary Pathology, is as follows; horses, from 32 to 38 pulsations per minute; ox or cow, 25 to 42; ass, 48 to 54; sheep, 70 to 79; dog, 90 to 100; cat, 110 to 120; rabbit, 120; guinea pig, 140; duck, 135; hen, 140.

"I came near selling my boots the other day," said Scuttler to a friend. "How so?" "I had them half-soled."

The Apiary.



Uniting Weak Swarms of Bees.

Two weak families, when united, will consume little, if any more honey than each would if left separate. The reason of this is, a strong colony is able to maintain the proper degree of warmth in cold weather, which greatly lessens the consumption of food. As soon as the autumn frosts have killed the flowers, colonies that are too weak to protect their stores are much exposed to robbery. Such may either be strengthened by bringing bees from a distance, or two of them may be joined together. When uniting stocks, smoke them thoroughly, and shake the bees into a box, or upon a sheet, together. Sprinkle them with sweetened water to prevent quarreling and to keep them quiet, and hive as a single swarm. Stocks in the Langstroth hive may be united without shaking the combs, if early in the spring, or in cool weather in the fall, or when the flowers yield a bountiful supply of honey, as the bees are then very peaceable. Treat them all to smoke, which will induce all to fill themselves with honey, and serve to give them the same scent. Remove the combs with the bees adhering, and place them together in the same hive, leaving out the frames containing the least honey. If one of the queens is known to be very old, she may be taken away. After closing the hive, place it upon the stand previously occupied by the stronger of the united swarms. In uniting bees when the weather is warm enough for them to fly, it must not be forgotten that, unless carried a mile or more away, they are strongly inclined to return to their old stand. To prevent this, give abundant ventilation, and close the entrance till near sunset. Close it again early next morning, opening it half an hour before sunset to permit the bees to fly. On the morning of the third day blow a little smoke into the hive and leave the entrance open, as the removed colony will not now return to its former stand. New swarms, before being hived, have given up their established location, and two or more of them may be joined together and placed upon any desired stand.

Second swarms are often worth but little if hived separately, but if two are united they will seldom fail to fill their hive and be in good condition for wintering. When using the common hive they should be united, if

practicable, but with movable comb-hives their issue should be prevented. Swarms issuing the same day will unite peaceably, or a swarm may be joined to another that has been hived three or four days; but, after that, a union is more difficult in the common hive. When such swarms do not issue about the same time, so as to be hived together, let them stand in separate hives until about sunset, then place the one first hived upon a sheet, raising the edge of the hive that the others may enter. Bring the other hive and shake the bees out upon the sheet. If the queen is seen while the bees are entering, she should be taken away, as the other queen may already have become fertile.—*Rural Sun*.

Bee-Hives and Wintering Bees.

At a meeting of the Wadsworth, Ill., Farmers' Club, several members gave their experience, as follows:

John Elliott said the size and shape of the hive is important, in his estimation, but he has never seen a patent one that he would give a dollar for. He has tried various modern patents, but prefers the old box hive, say from fourteen to fifteen hands high, and about twelve inches square. Let them have their own time to swarm. He does not like bee-houses, but would set their hives apart and protect them from the rays of the sun, and would let them winter on their summer stands. He wintered, once, some in the cellar, but had a lot of dead bees and mouldy combs in the spring. Another winter he packed straw around the hives, and it proved a disaster, losing over one-half of all he had. Bees can be kept as good as any other stock. George Miller, of Akron, has had considerable experience, and wants nothing to do with patent hives. He makes his hives about fourteen by sixteen inches square and fourteen inches high. He places several boxes on top, connected with the hive by holes, and over these boxes he places a large one to protect them. The inside boxes have glass ends, and by removing the cover box he can see what progress the bees are making, and remove the box at will. He winters his bees on the summer stand. He places a post in the ground and fastens a board on top of it, on which he places the hive. He then places a broad board over the hive to protect it from the weather. By placing ashes and lime about the foot of this post you will not be troubled with ants, etc. He did not lose a single swarm last winter. A. Briggs prefers the framed hive. He has had a good many bees die the past winter, but probably because he took too much honey from the hive. Father Lyman has kept bees more or less for twenty-five years, and can't agree with all that has been said this evening. He has made use of three kinds of hives, and thinks the best one is the Flanders hive, as it combines more qualities than he likes than any other he has used. His great difficulty was to protect the bees from the moths. Out of twelve swarms two years ago he got at least eighty dollars' worth of honey and about fifteen new swarms.



The Stock Yard.

Bone Spavin.

Prof. Magner, in his excellent work, says: "The only reasonable treatment for bone spavin is counter-irritation and rest. If there is heat during the first few days, apply cooling applications, such as an ounce of sugar of lead to half a pail of ice water. Keep the leg wet for about two weeks, when it may pass off. A dose of physic should be given. If this stage has passed, repeated blistering with a preparation of iodine or cantharides will be necessary; but much better would be the actual cautery in an operator's hands. Clip the hair closely over a large surface four or five inches above and below the enlargement, and then out to the middle of the back or fore parts of the leg. Any of the strong blisters recommended for spavins, for which formulas are given below, are to be used. If a blister, rub it in well with the hand for ten minutes or more. In two days put on some grease. When the inflammation goes down, wash with warm water and castile soap, and when dry put on more blister, and so repeat, keeping up just as much irritation as you can without destroying the hair. In the meantime the horse must be kept in a comfortable stall, for one of the conditions of cure is rest. Keep up the inflammation in this way for four or five weeks, after which give a run to grass. It is sometimes necessary to blister lightly, if the lameness does not disappear in six or eight weeks, which may be repeated a few times, with iodine ointment, in the proportion of one part of iodine to four of lard. Work should be light, if any, within three months. This treatment will usually cure without leaving a blemish.

Treat ringbones on the same principle. Trim off the hair and blister in the same manner, observing the same condition of rest. As regards taking off the enlargement, this treatment is as effectual toward that end as can be used.

Several of the very best recipes for the cure of spavins and ringbones will be found below. Bear in mind you must always clip the hair off the part to be blistered, and that the medicine must be rubbed in well with the hand for ten minutes:

Very Strong Blister for Spavins, Ringbones, Curbs, etc.—Finely powdered cantharides, 1

oz.; powdered euphorbium, 2 drams; lard, 1 oz.; tar, 2 oz.

A Very Active Blister for Spavin, Ringbone, etc.—2 drams corrosive sublimate, 1 oz. lard, $\frac{1}{2}$ oz. tar, 2 drams cantharides. Rub and mix well together.

A Good Blister for Spavin, Ringbone, etc.—Biniodide of mercury, $\frac{1}{2}$ dram; cantharides, 1 dram; lard, 1 oz. A fine blister for any purpose requiring counter-irritation and absorption; will take off curbs, splints, etc.

Powerful Absorbing Blister for Spavin and Ringbone.—Equal parts of biniodide of mercury and cantharides, three parts of tar and lard each. Rub in well with the hand for three mornings, and use lard after to soften and take off the scab, when it may be repeated, if necessary.

Treatment of the Horse Disease.

Dr. D. Ransom, of Buffalo, N. Y., gives the following description of the distemper, and prescribes the following treatment:

"This disease is acute catarrh or influenza, prevailing at this time as an epidemic. It consists in irritation, congestion and inflammation of the mucous linings of all the air-cells and passages of the head and throat. Everybody knows the symptoms. Little medicine should be given, as there is more danger of giving too much than not enough. By careful nursing, ninety-nine out of one hundred will get along without internal medicine. Take away their hay and oats; feed warm bran-mash and clean oat or rye straw, moistened with brine. We have given our horses, (and we have six all sick with the distemper,) from six to eight drachms of bromide of potassium two or three times a day, dissolved in a bran-mash, for the first two or three days, while the inflammation lasts. This medicine is a powerful sedative, and as such lessens the flow of blood to the head and lungs. I have used the bromide of potassium for two years past to break up severe colds (which is acute catarrh), of myself and family, and it never failed to cure the cold effectually in from twelve to twenty-four hours.

It has worked well on my horses. After the nose begins to run freely, the danger is past, and by good care the horse will soon be well. Externally I use and would recommend Dr. Trask's Magnetic Ointment to the throat, around the ears, and on the forehead. This

ointment contains tobacco and lobelia, and operates on the mucous glands of the head and throat by causing an increased flow of secretion from them, at the same time, by its relaxing effect, removing the stricture, and giving almost instant relief to the cough and breathing. Free ventilation, (but avoiding draughts of air,) is very important; good fresh air is very essential, therefore burning tar, or anything of the kind, should be avoided; if the weather is warm or clear, turn the horse out during the day."

How to Fatten a Horse.

To fatten a horse that has fallen off in flesh is sometimes a tedious business—indeed, the work of months. The following suggestions to accomplish it however, though without paternity, looks to us as wise and to the purpose: Many good horses devour large quantities of grain and hay and still continue thin and poor; the food eaten is not properly assimilated. If the usual food has been unground grain and hay, nothing but a change will effect any desirable alteration in the appearance of the animal. In case oatmeal cannot be obtained readily, mingle a bushel of flaxseed with a bushel of barley, one of oats and another bushel of Indian corn, and let it be ground into a fine meal. This will be a fair proportion for all his food. Or the meal, or the barley, oats and corn, in equal quantities, may first be procured, and one-fourth part of oil-cake mingled with it, when the meal is sprinkled on cut food. Feed two or three quarts of the mixture two or three times daily, mingled with a peck of cut hay and straw. If the horse will eat that greedily, let the quantity be gradually increased until he will eat four or six quarts at every feeding, three times a day. So long as the animal will eat this allowance, the quantity may be increased a little every day. Avoid the practice of allowing a horse to stand at a rack well filled with hay. In order to fatten a horse that has run down in flesh, the groom should be very particular to feed the animal no more than he will eat up clean and lick his manger for more.—*Germantown Telegraph*.

Breeding Hogs.

The following is the substance of the report of the Illinois State Swine Breeders' Association:

1. The lower the price of pork, the greater the need for growing those breeds from which the product can be most cheaply made. Depreciation in prices should be met by greater efforts to improve the stock.

2. To avoid possible deterioration, it is best to preserve the distinct breeds pure.

3. Before farrowing, give sows such food as will incite the secretion of milk. After farrowing, feed lightly at first, increasing the quantity carefully up to the full supply. Teach the pigs to eat as soon as possible.

4. After weaning, the pigs should have the best of care. Milk, with oats and corn ground

together, is excellent food, in proper quantity. Plenty of exercise is indispensable to health.

5. Market at nine to fourteen months old for profit.

6. It was thought best not to encourage the breeding of pure-bred animals for general pork-making; that is, it is not necessary to confine it to any pure breed to insure success, but that the mixing of pure breeds for this purpose has, in the main, given very satisfactory results.

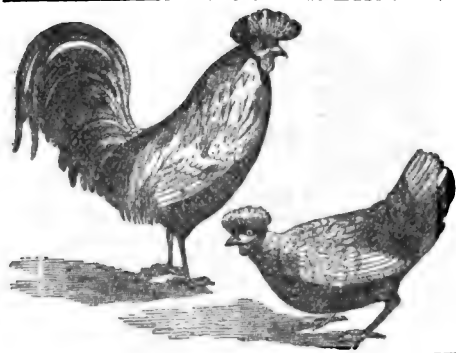
7. Ground or cooked food will, per pound, make more pork than unground or uncooked; but it does not follow that, under all circumstances, it is most profitable to grind or cook it. This will depend on the price of grain, the expense of grinding and cooking, and the cost of feeding. Each farmer must decide the question for himself, and by his own surroundings. It is better to shell and soak corn than to feed it in the ear.

8. Most diseases among animals are attributable to want of judgment and care in their management. All remedies for diseases which prevailed in 1871 failed. Kill the sick hogs, and find out, if possible, why they became so, and then apply the remedy to the cause. The style of architecture, although to be regarded, is not the most important part of a piggery. A pen well covered with coarse, wild hay, and kept clean, where the pigs are regularly fed and watered, is all that is indispensable to success.

Bemedy for the Foot and Mouth Disease.

A writer in the *London Times* assures us that the following is a cure for foot and mouth disease, having himself witnessed the effects of it upon upward of a score of cattle: One ounce of chlorate of potash, dissolved in one quart of water, adding eight drachms of camphorated spirits of wine when about to administer the dose. This is to be continued for three days, and half the quantity for sheep and calves for the same period. In the case in which the correspondent observed it to be effectual, the mouths of the animals had previously been cleansed by an application of a solution of alum and tincture of myrrh. For a time, he tells us, "the animals could eat nothing, but were very thirsty, and as a substitute for water, or in addition to it, he put into a tub ground linseed and toppings, pouring upon it boiling water, and letting it stand for an hour or two, and then filling up with water, making altogether about ninety or one hundred gallons of nourishing gruel. The animals drank this with great avidity in less than twenty-four hours; and on the following Wednesday, they fed freely upon cut cabbages and lucerne, mixed with meal, malt-combs, and chaff. On Friday their mouths were clean, and no lameness followed which required attention. The medicine was given for four successive days." The writer recommends all breeders and feeders of cattle to use lucerne and cabbages, instead of clover and tares, the latter of which he says are not comparable with the former in feeding qualities upon light land farms.—*Rural New Yorker*.

The Poultry Yard.



Keeping Poultry.

Alderman Mechi, the great English farmer, thinks he can raise poultry as cheap per pound as beef, and he tells why he thinks so in the *Gardener's Magazine*, as follows:

Do poultry pay? That is a very proper question to ask, for I hold it as principal that everything that does not pay, directly or indirectly, should be abandoned as commercially and agriculturally wrong. I test this by the following propositions and comparisons: It pays indirectly to produce cattle, sheep and pigs; if so, why not poultry? It does not cost more to produce a pound of poultry, live weight, than a pound of meat live weight. Well, then, do poultry sell at more or less per pound, live weight, than meat? The answer to this is: "A pound of poultry, live weight, always sells for much more than a pound of meat, live weight," and so the question is settled in favor of poultry.

The average live weight price of the best poultry is quite 9d per pound, or double the price of beef. At this time, of year poultry sells wholesale for much more than double the price of meat.

Poultry are evidently dear food to the consumer; but does it cost more food to produce a pound of poultry than a pound of meat, live weight? I answer, decidedly not; but the reverse. For my cattle and sheep do not eat worms and insects, whereas fowls consume them abundantly, and economize and apply every scattered seed or kernel that would otherwise be wasted. In another point of view, is the cost of attendance and shelter greater with poultry than with cattle? I reply, not.

As to the production of eggs, that depends upon the quality and quantity of food administered, and the accompaniments of proper warmth and shelter. There is no fear of overstocking the market with either eggs or poultry; we use daily one million of foreign eggs!

I generally keep from 300 to 400 fowls. They have free excess to every field during the whole year, and, although they help themselves at harvest time when the corn is in sheaf, I always get my best crops of corn on fields adjoining the hen-house. I have this year two

fields of wheat drilled, and only one bushel of seed per acre. They come within ten or twenty yards of the fowl-house, and are a perfect plant, although the poultry have been scratching and cultivating the fields ever since they were drilled.

We are apt to forget that fowls, like sheep, manure where they go. I must say I used at one time to feel nervous and angry when I saw them hard at work on the newly-sown corn, but I soon learned to feel confident that insects were their principal gain, and that my well and deeply deposited corn escaped.

HOW TO RAISE TURKEYS.—A farmer's wife, who has years of experience, gives the following as her mode of raising turkeys: In the first place, select a good kind. The autumn, or early in winter, is the most favorable time for that, just before the birds are sent to market. Keep them well during the winter. In the spring, a few days before they begin to lay, put them in an enclosure, where it is most desirable to have their nests, and where they cannot get out. After they have made their nests, they may be set at liberty without any fear of roaming or straying. Next, take good care of the eggs. They should be gathered carefully every day, and placed between layers of flannel or cotton, in a place of uniformly cool temperature, and turned over every day. As soon as the birds are hatched, feed them with warm bread and milk, well peppered, with boiled eggs added; or thickened with cooked corn meal, or wheat middlings, which is better. A little care in these matters will repay all efforts. Before I knew how to take care of the eggs, I set thirty eggs one year, and but one of them hatched. The next year I set forty eggs, and nearly all of them hatched and the birds lived.—*Exchange.*

HOW TO HAVE FRESH EGGS.—A correspondent of the *Country Gentleman*, says: "The way to have fresh eggs at all seasons of the year, and the only way I know of, is to have a breed of hens that will lay in the winter as well as in the summer. In order to accomplish this, 1st. Get the hens. 2d. Keep them well on a variety of food—pounded bone in the winter to take the place of gravel in the summer. 3d. Give them warm roosting places; a hen, poor, cold and half frozen every night, will not lay the next day. 4th. Hatch early pullets to lay in the fall, while old hens are moulting, as they will stop laying for a few days during this process, and keep mostly pullets over winter, as they will lay more eggs the first year than the second, and so on. There is scarcely a day in the whole year that I do not bring fresh eggs from the barn to the house.

LIME WATER FOR FOWLS.—Lime water as an occasional drink for fowls is said to be a preventive of many diseases and assists the formation of bone and eggs. It should be prepared as follows: Pour over quick-lime some water, and when the lime is slacked and settled, draw the clear water off, which can be kept for a considerable time.



The Vegetable Garden.

Although there is nothing to be done this month in putting in seeds, there is a great deal to be done in making the ground ready to receive them. As we have already recommended, the manure for the garden should be hauled out, spread, and forked or spaded in, so that early in March it will be thoroughly decomposed and assimilated with the soil when the young plants begin to want nourishing food. This is a good time, too, to prepare hot-beds, to give a start to plants, and secure an early supply of vegetables. Those who can afford the expense, should build permanent and substantial frames, with well-glazed sashes; but those who cannot afford these more expensive structures can, for a few dollars, supply themselves with frames which will answer all practical purposes, though their appearance may not be as neat and attractive as might be wished. Onion sets may be planted now. Winter cabbages and turnips should be hoed when the weather will permit. In the extreme South, peas, radishes, lettuce and spinach may be sown, but in the more northern latitudes, if they are sown, they must be protected in very severe weather. The asparagus bed should be heavily dressed with stable manure, and a moderate quantity of salt be applied to it. This is a good time to plant new strawberry beds, and cultivate and mulch the old ones. Plant out raspberry canes.

The Flower Garden.

The roses should now be trimmed to proper shape, and the soil round their roots stirred and enriched by an application of a mixture

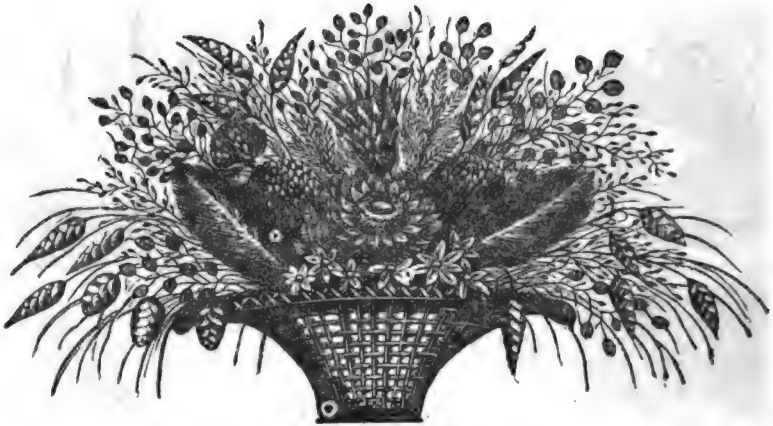
of ashes and rich earth. Rose cuttings may now be planted out. This is a good time to divide and transplant the roots of climbers and ornamental vines. If not already done, as advised in last month's hints for the flower garden, let the flowering bulbs be separated and planted out without delay. Hyacinths, tulips, gladiolus, crocuses, peonias, should be planted at once. No ordinary frost in our country will hurt them if they are planted deep in the ground.

Dress up the flower garden now. Get everything ready for spring. If you have not got a flower yard, make one without delay. You may not be willing to "give a cabbage for all the flowers in the world," but if such is your estimate of the value of flowers, keep it to yourself, and affect the taste if you have it not, in order to gratify your family and friends who regard flowers as things of beauty. Any husband living on a farm who refuses to give his wife a flower garden is, in our opinion, guilty of such an act of cruelty as ought to entitle his wife to a divorce.

"He is fit for treason, stratagems and spoils."

The Orchard.

Fruit trees of all sorts can be transplanted this month with the best advantage. Prune grape vines. Inspect the peach trees at the roots—find and kill the borer. Plant all kinds of fruit seeds, taking care not to plant them too deep. Cut off all diseased and decayed limbs. Stir the soil round old trees, and mix with it some good compost. Take proper precautions against rabbits barking the young trees.



ORNAMENTAL GRASSES.

Hot-Beds.

No garden should be without a hot-bed, in which to give early vegetables a start. The walls may be either made of brick or of stone, cemented on the inside, or they may be made of a dry-goods box. The latter with the front cut down to half the height of the back, and the sides gradually sloping, covered tightly with window sash or frame, covered with oiled osnaburgs, and exposed to the south or south-east, will answer all the objects of a hot-frame.

We copy from White's "Gardening for the South" the following well considered, practical directions for the construction of hot-beds :

Frames or hot-beds are most usually employed for forwarding plants. The frame for general use has from three to five sashes, and is made for convenience about four and a half or five feet wide, and the length depends on the number of sashes, which are usually about forty inches wide. Use the smallest glass you can obtain, certainly not over seven by nine; a smaller size is preferable, as it is not so liable to be broken, and can be more readily repaired. These sashes are made without cross-bars, the glass overlapping like the shingles of a house, and resting on bars extending lengthwise of the sash. The lap of each pane of glass need not be over half an inch, and if the glass is set in the sash when freshly painted with two coats of paint, no puttying is necessary, if the sash is well made. The frame should be made of inch-and-a-half plank, as high again in the back as in the front, to give the sashes the proper slope to the sun, and sufficient inclination to carry off the wet. The front, of course, is toward the south. Let the back and front be nailed to corner posts, so as to admit the ends to fit in neatly, which ends are to be made fast to the posts by common carriage-bolts, in order that the frame may be taken asunder to store when not in use. All joints in the sides and ends should be tongued and grooved to prevent the admission of cold air or the loss of

warm air from the bed. Each end should be made an inch and a half higher than the back and front, and grooved out one-half its thickness, to permit the sash to slide and leave the other half to support the outside. At the corner, also, of each sash, let another piece of scantling be placed, and on the top of these, narrow strips the length of the sash are to be nailed, for the sash to slide upon. Between the sashes, nail an inch strip a little thicker than the sash to the narrow plank on which they slide, and put on the sash; and upon this strip, in cold weather, lay another narrow strip, projecting over the sash a little, to cover the joint and keep out the cold. Provide for the bed a full supply of good horse manure from the stable, mixed with moist litter, preferring that which is fresh, moist, and full of heat. If there is not sufficient litter in the mass the heat will not be lasting; so as a substitute add oak-leaves or tan-bark. There should be at least one-third litter in the heap. Shake it up and mix it well together, sprinkling with water if dry, and throw it into a compact heap to ferment. In two or three days if warm, or if cold, in a week, turn it over, and if dry and musty in any part, water again. Let it be two or three days longer, and then work it over thoroughly, as before, and water if necessary. In a dry, sheltered situation opening to the south, mark out the dimensions of the bed, making it fully a foot longer and wider than the frame each way. Throw out the earth about ten or twelve inches deep. Then begin to form the bed by spreading a thin layer of the prepared manure upon the ground, mixing the long and short well together. Upon this spread other layers mixed in the same manner, beating each layer with the back of the fork, but not too heavily, to keep it level, and equally firm throughout. Stakes should be placed at the corners to work to. The edges should be kept true and the corners firm, to do which the outside of each layer must be first laid down, and to make the manure keep in place, a proper admixture of long litter is required. Continue until the bed is three feet above the surface, then spread the fine manure

that is left, evenly over the top, and water freely. As soon as finished, let the frame and glass be put on with care, and keep them close until the heat rises and a steam appears upon the glass. As soon as the heat rises, give air at noon each day, but keep closed in the evening and at night, unless the heat is very violent, when a little air should be given. In three days, if the manure was sufficiently moist, the bed will be ready for use. If it has settled unequally, raise the frame and level the surface. Place in the frame six inches of fine, dark-colored, sandy garden-soil, spread it evenly, and put on the sash. When warmed through, sow in pots plunged in the mould, or in small drills from one-eighth of an inch to an inch deep, varying in depth with the size of the seeds, and cover by sifting fine earth on the surface. Water gently by sprinkling with tepid water through the fine rose of a watering pot. When the plants appear, they should have air every day freely (unless absolutely freezing) which will bring them up strong, and prevent their dropping off by excess of confined moisture. There are very few days which will not permit opening the bed, not by sliding down the sashes, but by raising them at the back, holding them open by a triangular block to slip in, so that they can be opened from two to five inches. Open the bed in the middle of the day, as above, but close early that the plants may not become chilled. During warm, gentle rains, the sash should be opened, but closed very carefully during cold or heavy washing storms. About 60° is the proper temperature; it should not rise above 75°. Such a bed as this is invaluable for striking cuttings of all kinds, in which case there should be an inch of clear river sand or charcoal spread over the surface. Annuals of all kinds for the flower garden, tomatoes, peppers, cabbage and lettuce plants, etc., will be ready, if the bed is made in January, for transplanting quite as soon as they can be removed with safety. Make the bed six or eight weeks before the plants will be required. The quantity of manure required to form a hot-bed varies with the season and external temperature, a larger bulk being needed in January than at a later season. Even a small bed should have the mass not less than five feet long by four feet wide, to maintain the proper heat. If the soil whereon it stands is clayey, the whole bed should be made above ground, as the water settling in the trench would check the heat of the entire bed. If the bed is made early in the season, it will require the application of fresh materials at the sides or "linings" to keep it at the proper temperature.

MAKING THE STRAWBERRY A SURE CROP.—You can make the strawberry crop a sure thing, say the Wilson or some other favorable sort. Put the Wilson in a clay soil with a large amount of vegetable or chip manure. Sawdust, rotten, is good. This will keep the soil loose and porous, so as not only to be safe against an excess of rain or of drouth, but, the land drained against the frost also, which

otherwise might lift and hurt, if not kill the plant outright. You are thus secure so far as the season is concerned. For protection in winter, simply cover with evergreen boughs. This will prevent the frost from injuring and also keep the plant from being smothered. It has never failed with us. Cultivate deep, have the land not over rich, and cultivate cleanly. Mulch at the bearing season with cut-straw. Keep off runners. If you wish only large fruit, thin out. Plant about eighteen by twenty-five inches.—*Western Farmer.*

For the Southern Farm and Home.

Annuals, Biennials and Perennials for Fall and Winter Planting.

MR. EDITOR—It may be of interest and value to many of your lady readers to know the names of some of the best kind of annuals for planting at this time so as to insure early and vigorous blooming in the spring and summer. The subjoined list will, I think, be found sufficient. I can recommend it from experience, having sown the seeds of nearly all of them in this month in Northern Georgia, and having had complete success.

Alyssum maritima, or Sweet Alyssum, is always desirable, on account of its fragrant white flowers.

Antirrhinum, or Snapdragons. Of this there are many beautiful varieties, and the Tom Thumb species are particularly pleasing. They are perennials, but if sown in the autumn, will bloom the following summer.

Candytuft, in all its colors, white, purple and crimson, is welcome in every garden.

Armeria, or Catchfly, in three varieties.

Clarkia has ten or a dozen different varieties, in white, rose, magenta and violet flowers, and some of them are double.

Erysimum should find a place in every garden, on account of its deep orange flowers, which produce a very brilliant effect if allowed to flower in masses.

Dianthus, or China and Japan Pinks, are lovely perennials, and the flowers are beautifully variegated and marked,—many of them being very double, while their colors run through all the shades of red, from pink to the richest crimson, and are lined and spotted with white.

Delphinium, or Larkspur, is never grown in such perfection as when the seeds are sown in fall. They cannot bear transplanting, but should be grown in thick masses. The various shades of blue, mingled with the white varieties, make a beautiful show.

Pansies will also bloom much larger and finer when sown in the fall. *Gaillardia picta* is a showy flower, which will bloom much earlier in the spring.

Scabiosa, or Mourning Bride, in its several varieties, is a well-known plant. Some of the new dwarf double varieties are very beautiful and can be had in white and various shades of maroon, purple, scarlet and crimson.

Leptoshiphon and Nemophila should always be sowed in the autumn to be seen in their greatest beauty. They are not showy flowers, but are very lovely if they bloom before the sun's rays become too intense.

Petunias, Portulaca and Phlox will sow themselves year after year, without seeming to deteriorate in the least; but Pansies and Verbenas will not grow in pristine beauty, but soon degenerate by neglect, and they will not blossom well in the same bed year after year. Both of them require change of base.

I hope every lady reader of the FARM AND HOME will make the experiment of sowing flower seeds in the fall. The reward will be found to be more than ample for the labor employed.

E. J. B.

Hyacinths in Water.

The cultivator of hyacinths in water should not grow large so much as medium-sized solid bulbs. What he wants is a finely-developed spike of flowers crowning a short, healthy growth. Large bulbs, especially of some varieties, such as Lord Wellington and Temple of Apollo, single reds, are very apt to throw up two, three, and even four small spikes, the size of the duplicate spikes decreasing as the number is larger. About the middle of October is the best time to place the hyacinths in glasses. The best type of glass is not unlike in appearance a wide-mouthed, small decanter. Fresh water should be used, and it is a good plan to fill the glasses, and then place in each three or four pieces of charcoal, to keep the water from becoming offensive, therefore obviating the necessity for its being frequently changed. This should be done about three days before the bulbs are placed in the glasses, as in the interim the charcoal becomes thoroughly saturated with moisture and sinks to the bottom of the glass. If placed in the water at the same time as the bulbs, it will occasionally happen, in the case of strong, quick-rooting varieties, that the descending roots encircle the charcoal and keep it close under the base of the bulbs. There is no real necessity for placing the glasses in the dark to induce a free root growth. It is an old practice, but it is not the more necessary to be followed because it is old.

I have grown hyacinths in glasses with much success for the past ten years, and I have for a considerable period discontinued placing them in the dark, and that simply because it is not necessary. The theory set up is that "roots, as a rule, delight to grow in the dark, the action of light being unnatural to them." But the generality of hyacinth glasses are of an opaque character, and the newest types in Etruscan ware, etc., altogether so. If the theory be a correct one, the glasses themselves supply the conditions. When the bulbs are placed in my own glasses, they stand on the mantel-piece, the sideboard, etc., and a bulb seldom fails to root very satisfactorily, and then invariably

because of some inherent defect. The roots of the hyacinths make growth first, unless it be very late when they are placed in water. In its own good time the foliage appears, and then it becomes necessary to keep the glasses in a cool, airy position, so that the leaves do not become drawn, as also to keep the glass filled with water to supply that which becomes absorbed by the roots and lost through evaporation.

When charcoal is placed in the glasses it is rarely necessary that the water be changed. I have read very elaborate, but very tiresome rules relating to the culture of hyacinths in water, in which it is urged that the water be changed at least once a week. Some of my best flowers have been grown in glasses the water in which was not once changed. If a brisk fire be kept in the room where the glasses are, there will be a need for fresh water being placed in the glasses twice or thrice a week, so that no part of the roots be without water. The best position for the glasses when the bulbs begin to make upward growth is the most airy and lightest part of a sitting-room, but as far from the fire as possible. The foliage of the plants should be kept free from any deposits of dust; a small piece of damp sponge will remove these with but very little trouble. As the flower spikes are thrown up, proper supports, made on purpose, and sold with the glasses, should be affixed for use. They are neat and elegant in appearance, and answer the end for which they are designed admirably. If the glasses be placed in the window when the spikes are in flower, they should be shaded from the action of the sun when bright and warm, or removed from their position for a time.—"R. D.," in *Rural New Yorker*.

Flowers for Winter.

How the early frost has changed the appearance of our pretty flower beds. We mourn their departure almost as lost friends.

"Where are the flowers?
The fair young flowers,
That lately bloomed and stood?"

But sit we not down in idle mourning over their loss, but in a neat box of mellow, rich earth, we will make us a window-garden to cheer our hearts, until the warm spring sunshine and rain shall bring our flower friends back again. Something green for our firesides; something bright for the home-room. "What shall it be?" is the first question that presents itself to our minds. Do not ponder it too long. If we cannot conveniently get fancy bulbs, do not let us give up the idea on that account. Many of our humble flowers, that are passed by with hardly a thought in summer, assume new beauties in the bleak, cold winter, when there are not so many contrasts around them. "A half loaf is better than no loaf." Let us not be ashamed to do the best we can in this regard. If we can get beautiful house plants, by all means let us have them; but let us have some flowers in the house, during winter, at any rate. Verbenas make a pretty show. Sweet violets are very desirable; almost any

flower, if well cherished, will abundantly repay our care. An edging of giant-curl'd parsley around the flowers, would add utility to grace. Do not let the spirit, "if I cannot get the best, I will have none," spoil the pleasure to be derived from unpretentious flowers in the winter time.—Mrs. F. L. H., in the *Illustrated Journal of Agriculture*.

Correspondence.

Haywood County Fair.

BROWNSVILLE, Oct. 19, 1872.

The Fourth Annual Agricultural Fair of Haywood County closed on yesterday. I am sorry to say that it proved almost a failure, very few agricultural products on exhibition, no farming implements, nothing from the mechanic, and a very small display of stock of any kind. But what surprised me most of all was the meager display of the handiwork of the ladies in the Floral Hall. Scarcely anything there on exhibition at all. Although the display of stock was small as to number, the quality was extra fine. Mr. R. H. Taylor, of Haywood county, importer and raiser of blooded stock of all kinds, had on exhibition a large number of Berkshire hogs of all ages, that I think cannot be excelled anywhere in this country or in England. His imported Berkshire boar, "King of Clubs," is a noble hog. He seems to be perfect in all his parts. He also had a lot of seven pigs, from one mother, just three months old, and the finest I ever saw. Any one wanting to improve their stock of hogs, would do well to correspond with Mr. Taylor. He is a perfectly reliable gentleman, and sells nothing but the pure blood. He also exhibited a number of blooded horses, stallions, mares, and colts. Mr. Wilkes, of Hardeman county, had quite a number of fine horses and cattle on exhibition. He received some eight or ten premiums. The number of entries of saddle and harness stock was large, compared with the others, and very fine. Mr. B. G. Allison, of Haywood, drove two blacks, in double harness, that would take the premium at almost any fair. The entries of mules were few, and of sheep none.

The Board of Directors, with Mr. D. P. Williams, as President, and J. W. Peebles, Secretary, seemed to exert themselves to make their fair a success, but they did not seem to be sustained by the farmers of the county, generally, nor by the citizens of *Brownsville*, particularly. Very few of the latter visited the grounds on any day during the fair.

Haywood county is one of the finest farming counties in West Tennessee. The lands are generally level, and very rich. Corn, wheat, oats, in fact grain of all kinds, do well here. Also grasses of all kinds, which makes it a fine stock country, where the proper attention is given to stock raising. As to cotton, there is no county in the State that produces a greater yield to the acre. But a large portion of it seems to be given over to the negro, therefore is badly cultivated, though there seems to be a gradual improvement in their management.

I cannot close without expressing my thanks to President Williams, Secretary Peebles and to the Board of Directors, one and all, for the kindness and hospitality shown me, and for the facilities afforded me in the prosecution of my mission among them. May their success in the future reward them for their *seeming* failure this year.

I herewith inclose you the names of a goodly number of subscribers to the *SOUTHERN FARM AND HOME*. I find it a very popular journal with all who have had an opportunity of reading it. It is a work that ought to be in every farmer's house.

I leave here to-day to attend the fair at Jackson, where you shall hear from me again.

Yours truly, J. M. F.

The Jackson Fair.

JACKSON, TENN., October 26, 1872.

I arrived in Jackson on Monday morning, the 21st, to attend the West Tennessee Agricultural and Mechanical Fair. The city of Jackson is the county-seat of Madison county; contains a population of between eight and nine thousand of as intelligent, refined and hospitable a people as is to be found in any city in the land. It is a beautiful city, located in the very heart of one of the finest farming countries in the world. On every hand you see signs of improvement. It is fast becoming a great railroad center. The Mobile and Ohio and the Mississippi Central cross each other here, and soon the road from here to Huntingdon, in Carroll county, will be completed, and I hope it will not be many years before the Memphis and Jackson road will be built.

Jackson is well supplied with churches and schools of the various denominations. West Tennessee College was established here about the year 1845, and is partially endowed by the State. It is now presided over by Rev. E. L.

Patton, D. D., assisted by three able professors in their various departments. Dr. Patton is an able president and a thorough teacher, and is rapidly building up the college again, which had gone down considerably during the war. It has now over ninety scholars. The Memphis Conference Female Institute was established about the year 1840 or '41, and has been in successful operation ever since. It has at present one hundred and seventy-five pupils, presided over by that able and successful educator of young ladies, Rev. A. W. Jones, D. D., with a corps of twelve able assistants in the various departments. The school is now in a very flourishing condition. Twelve months ago Rev. J. E. Bright, D. D., came to Jackson and opened the Presbyterian High School for young ladies. His school now numbers between sixty-five and seventy pupils, with the promise of a considerable addition very soon. Mr. Bright is one of the oldest and most successful teachers of young ladies in West Tennessee. He opened the Brownsville Female Institute about the year 1836 or '37. He remained there fifteen or sixteen years. He then took charge of the institute at Trenton, Tenn., where he remained until driven from his home by the Federal army. He then went to Louisiana and immediately opened a school there, where he remained until twelve months ago. The Baptist Female College is presided over by Rev. Mr. Johnston, with an able corps of assistants. This institution is also in a very flourishing condition, but I failed to learn the number of pupils in it. Mr. Johnston is an able and a successful teacher. He came here two years ago, and commenced at the foundation, and has succeeded in establishing his school on a firm basis.

There are three papers published here, the *Whig and Tribune*, the *West Tennessee Plain-dealer*, and the *American Farmers' Advocate*, an ably conducted agricultural monthly.

But the Fair. On Tuesday morning—the opening day—it rained all the forenoon, but about twelve the clouds began to break away, and by two o'clock the Fair opened with a pretty large number present, notwithstanding the gloomy weather. Every succeeding day brought out immense crowds of visitors. The collection of stock of all kinds, from every part of the country, was very large, and of the very best quality. It was acknowledged by many from a distance that it had not been excelled by any fair in the State. The collection of thorough-bred and saddle horses and mules was unusually large for a cotton country. The exhibition of thorough-bred cows was very large. There were some of the finest specimens of hogs that I have ever seen. My friend R. H. Taylor, of Haywood, was there with his English imported boar, the King of Clubs, and a family of seven pigs, sired by King of Clubs, the finest I ever saw. They were perfect beauties. Mr. Taylor is one of the best farmers and stock raisers in this country. I would recommend him to any one wanting thorough-bred stock of any kind.

The display of farm products—corn, beets, turnips, carrots, and, in fact, everything raised on the farm and in the garden, except wheat—was very large and fine, showing that we have one of the finest farming countries in the world, if properly cultivated. I was sorry to see no wheat on exhibition, as I know it grows finely in this section. There was a fine display of agricultural implements of a very superior quality.

Floral Hall was "a thing of beauty," showing great industry and a cultivated taste on the part of the ladies of "Old Madison." The hall was beautifully decorated with the finest flowers, shrubbery, and paintings. The paintings were from the young ladies of the various schools of Jackson.

Time would fail me to give a full description of all that was to be seen, both of the beautiful and useful. In fact, the Fair was a complete success, and will pay a very handsome dividend to the stockholders.

The Board of Directors, with Colonel R. B. Hurt, President, and C. W. Green, Secretary, placed me under many obligations for courtesies extended. They gave me a cordial reception, and afforded me all the aid in their power to facilitate my mission. They are all thorough-going men, who mean "business" in anything they undertake.

The hospitality of the citizens of this county seems to be literally unbounded, as was displayed during the fair. Every day the amount of provisions spread out on the grounds was immense; everybody was invited to eat. Everything passed off in the most quiet, orderly manner—no disorder or accident to mar the pleasure of the occasion. The citizens of Madison have cause to be proud of their Fair.

I was glad to find the *Southern Farm and Home* very popular with all who have had an opportunity of examining it. I circulated about one hundred copies among the farmers, and there is promise of its gaining a much larger circulation in a short time.

J. M. F.

Irish Potatoes.

MR. EDITOR—Hoping that any hint which will be of service to our people will be willingly communicated to them through the *Farm and Home*, even though the writer may be a plain farmer unaccustomed to write for the papers, I will give you my mode of planting Irish potatoes, by which I raise as fine potatoes as any I see imported from the North at \$7 50 per barrel. Select a rich piece of ground. Break it well, and do not be afraid to go too deep. Then, with a double-shovel, open deep furrows two and a half or three feet apart. Fill up these furrows almost to the top with cotton seed, and having cut the potatoes, drop the slits on the cotton seed about eight inches apart. Cover with a turn-plow, throwing a furrow on each side. There will be nothing more to do than to destroy the grass and weeds.

EARLY ROSE.

WARREN CO., MISS., Nov., 1872.

Household Department.

Domestic Receipts.

STUFFING FOR CHICKENS.—Three teacupfuls of grated bread-crumbs rubbed through a colander (do n't let a drop of water come near those crumbs, and take out every bit of crust); one teacupful of very finely-chopped beef-suet; two-thirds of a teacupful of chopped parsley; a good pinch of sweet marjoram and summer-savory; the grated rind of one lemon; some grated nutmeg, pepper, and salt. Now bind all these ingredients together with one or two beaten eggs, stuff your chickens, either for boiling or roasting.

BAKED CHICKEN PIE.—Clean and cut up your chickens and put them in a pot to stew, covering them with water. Put butter (large spoonful to two chickens) in it, with salt and pepper. While it is stewing, make a rich puff paste with lard and flour, roll out a piece and line a baking pan, stir a tablespoonful of flour with water and stir it in the chicken, then pour it all in the pan with the paste in it. Roll out a piece of dough for the top and butter it, sprinkle flour over it, and roll again; do this twice, then put it on the pan and put pieces of dough twisted across the top and in rings between; stick it well in the center with a fork, press the edges with the fork, and bake it slowly. You have, then, a North Carolina pie.

PICKLED CABBAGE.—A correspondent of the *Country Gentleman* says: "In response to the inquiry, 'how to make pickled cabbage,' a few weeks since, I send the following, which our people have tried several years, and know to be good, and is liked by those who have eaten it. It keeps well a year, and how much longer it would keep I am unable to say. If one is not over nice in regard to the form in which it is served, I think it will suit the palate of any who are fond of the like pickle. Take any quantity of well-formed cabbage heads, and thick meated squash, or bell peppers, and chop them fine and mix. Use about one-third pepper, and two-thirds or more of cabbage after chopping; for each gallon, take one heaping tablespoonful of ground cloves, about half the quantity of ground cinnamon, half a tea-cupful of round (or whole) mustard, and two tablespoonfuls of fine salt; mix thoroughly, and place it in a stone jar, and pour over it scalding hot cider vinegar; cover and set in the store-room, where it will keep cool and not freeze. It will answer to use in

twenty-four hours. Small green tomatoes, or other vegetables, may be added, if desired, and pickled whole. One who does not like to be at the trouble of stuffing peppers, will here find an excellent substitute. The vinegar should not rise above the cabbage, only well saturate the mass."

NEW METHOD OF MAKING BEEF-TEA.—In order to meet the daily-felt want of concentrated fluid meat food, a want not supplied by beef essence as ordinarily made, Dr. H. O. Wood has invented the following process, and found in practice that it worked well: Take a thin rump steak of beef, lay it upon a board, and with a case-knife scrape it. In this way a red pulp will be obtained, which contains pretty much everything in the steak, excepting the fibrous tissue. Mix this red pulp thoroughly with three times its bulk of cold water, stirring until the pulp is completely diffused. Put the whole upon a moderate fire, and allow it to come slowly to a boil, stirring all the time to prevent the "caking" of the pulp. In using this do not allow the patient to strain it, but stir the settlings thoroughly into the fluid. One to three fluid ounces of this may be given at a time, and will be found to be very nourishing.—*Canada Lancet*.

CHOW-CHOW.—Take a quarter of a peck of green tomatoes, the same quantity each of pickling beans and white onions; one dozen each of cucumbers and green peppers, one head of cabbage. Season to the taste with mustard, celery seed, and salt. Pour over these the best cider vinegar, sufficient to cover. Boil slowly for two hours, continually stirring, and add, while hot, two tablespoonfuls of the finest salad oil.

We find the following in an exchange: "A standing antidote for poison oak, ivy, etc., is to take a handful of quick lime, dissolve in water, let it stand half an hour, then paint the poisoned parts with it. Three to four applications will never fail to cure the most aggravated cases. Poison from bees, hornets, spider bites, etc., is instantly arrested by the application of equal parts of common salt and bicarbonate of soda, well rubbed in on the places bitten or stung.

EAST INDIA METHOD OF CLEANING SILVER.—The East Indian jewelers never touch silver ware with any abrasive substance. For all articles of the kind, even the most delicate, the method of cleaning they adopt is as follows: Cut some juicy lemons in slices; with these

rub any large silver or plated article briskly, and leave it hidden by the slices in a pan for a few hours. For delicate jewelry the Indians cut a large lime nearly in half, and insert the ornament; they then close up the halves tightly, and put it away for a few hours. The articles are then to be removed, rinsed in two or three waters, and consigned to a saucepan of nearly boiling soapsuds, well stirred about, taken out, again brushed, rinsed, and finally dried on a metal plate over hot water, finishing the process by a little rub of wash-leather (if smooth work). For very old, neglected, or corroded silver, dip the article with a slow stirring motion in a rather weak solution of cyanide potass.; but this process requires care and practice, as it is by dissolving off the dirty silver you obtain the effect. Green tamarind pods (oxalate of potash) are greater detergents of gold and silver articles than lemons, and are much more employed by the artisan for removal of oxides and firemarks.

REMEDIES FOR CORNS.—Bathe the feet in tepid water, to soften the corns; pare these off very closely with a sharp knife; then rub on well, green peach-tree leaves; when, after continuing the rubbing once or twice a day, the corns will disappear.

A good corn salve could no doubt be made for winter use, by bruising the peach leaves when green; then boil them in water until the strength is extracted, then take out the leaves, strain the water off the sediment, add a sufficient quantity of resin, beeswax, tallow, and lard oil to make it soft enough, and simmer down, without burning, until the water is evaporated. Soften and pare the corn, as before directed, spread the salve on a small piece of cambric or linen, and apply, putting on the sock or stocking carefully, so as not to rub it off. Keep applying until the corn disappears.

The following is a recent English recipe for the same purpose: Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day with the following salve:

R. Black oxide of copper.....gr. xv.
Lardoz. ss. M.

English Children.

The new-born English aristocrat receives as soon as born a little bed with a hard mattress. From its earliest age it is taken, warmly wrapped, into the fresh air. After the first year its meals are reduced to three, and this rule is so unchangeable that no child thinks of requiring anything more; and from this time its food is of rich milk, and bread and butter, and good meat. After breakfast it remains

several hours in the open air, and then sleeps. The whole afternoon is spent outside. From earliest childhood the children of the aristocracy wear short sleeves, and often the knee is left bare, though the extremities are clothed in the warmest manner. At five years of age they begin to dance. Never are English children entrusted to the care of a young nursery maid, but to an elderly, experienced person, under whose direction they constantly are. As soon as the young girl goes to school, the carriage of the head and shoulders becomes an object of attention, and under no circumstances is she permitted to sit otherwise than upright. "My child grows but once," says an English mother, "and therefore nothing is so important as her physical development. Everything else can be acquired later."

An English child rises at seven, breakfasts at eight, dines at one, sups at seven, and at nine o'clock goes to bed. Until twelve years of age they pass the greater part of the day in the open air, with only about four hours' mental work. The young English aristocratic maiden dines first with her parents at eighteen years of age, when she leaves school and makes her *debut* in society. She is fresh and blooming as a rose, with light step and eyes beaming with pleasure and life. Her frequent laugh displays her beautiful teeth, and her hair is rich and abundant. Here, for the first time, Violet displays the fine fullness of her contour. London possesses noble museums, galleries of art, and treasures of architecture, but one of the most charming of its sights may be seen on fine afternoons in Hyde Park—crowds of children merrily playing, earthly angels of incomparable beauty. A sight equally interesting may be witnessed after service on Sunday at the Foundling Hospital—several hundred children, ranging from five to thirteen years of age, of the most noble physique and absolutely bewildering beauty. Two of the most wonderful sights of Europe are the children of England and the flowers of Paris. Both appear to have descended from Paradise, and scarcely to belong to earth. Nowhere else are seen such blooming maidens and children as in England. Of course the life of gay society undermines to some extent what the early training has accomplished; but the sensible physical education of the first years leaves permanent effects, and the English woman remains equal to the duties of life, and the requirements of wife and mother. If she does not remain perfectly well, she retains enough health to be ever beautiful. One sees in Great Britain ladies of sixty with complexions fairer than those of our youngest maidens, and whose hair, though slightly silvered, is yet abundant and handsome. Just as by the Greeks every trouble was taken to reach the highest beauty, so too with the English aristocracy. Many artists who have pilgrimaged half over the world assure us that the daughters of Albion surpass all others in the perfection of physique. Even in Europe the women of the best classes are not so healthy as the men, except, perhaps, in England.—*Galaxy*.

The Southern Farm and Home.

MEMPHIS, TENN., DECEMBER, 1872.

WM. M. BROWNE, - Editor and Proprietor.
BOYLE & CHAPMAN, - - - Publishers.

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

THE EXPOSITION, which was opened on the 15th of October, closed on the 25th ult. We rejoice to know that it has been a great success from beginning to end. It has delighted the thousands of persons who have visited it by its varied display of goods, wares, and merchandise of every description—of things useful and ornamental; it has compensated its owners for their outlay of time and money, while it has demonstrated their sagacity and public spirit by surpassing their most sanguine expectations both in the amount of enjoyment which it afforded the people and in the extent of its pecuniary profits; and it has reflected great credit upon the city of Memphis, while, we are happy to add, it has contributed materially to the prosperity of the commercial community. The Memphis Industrial Exposition is now an established institution. Next year we expect that it will be opened on a much larger scale, and that our leading citizens of every class uniting their influence and means with those of the gentlemen already identified with it, will make it equal, if not superior to any exhibition of like character on the continent.

PERSONS remitting money for subscriptions to the FARM AND HOME are particularly requested to sign their names distinctly and give their full address—name, post-office, county, and State. A few days ago we received a letter making a remittance to renew a subscription from Mobile, but owing to the absence of signature we do not know whom to credit. If this should reach the subscriber's eye, we beg him to write us again and sign his name this time.

THE NORTH AMERICAN BEE-KEEPERS' ASSOCIATION will hold its next session at Indianapolis, commencing December 4th, and continuing until the 7th. Prominent bee culturists from all parts of the country will be present.

VOL. IV, No. 2-3.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the FARM AND HOME and any of those papers at the subjoined reduced rates:

FARM AND HOME and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
FARM AND HOME and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
FARM AND HOME and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
FARM AND HOME and <i>Columbus (Miss.) Democrat</i>	\$3 00
In addition to these we can furnish the FARM AND HOME and any one of the following valuable periodicals at the following prices:	
FARM AND HOME and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
FARM AND HOME and <i>Southern Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Harper's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Appleton's Journal</i> , per annum.....	\$5 00
FARM AND HOME and <i>Hearth and Home</i> , per annum.....	\$3 00

ONE WORD MORE.—We again earnestly request those subscribers who are in arrear to pay what they owe and renew their subscriptions for the coming year, otherwise we shall be reluctantly obliged to discontinue sending them the magazine.

RESPECTFULLY DECLINED.—Jerome B. Hudson & Co., describing themselves as "commission merchants" of New York, have generously proposed to allow us to publish for them a column advertisement about a \$5 sewing machine, in payment for which, provided we agree to publish "*very low, much less than our regular published rates*," they offer to give us their note at three months. We decline Mr. Jerome B. Hudson's proposition most decidedly, for the following reasons: First. We do not publish any advertisement one cent below our regular published rates under any circumstances. Second. We do not publish advertisements coming from unknown parties unless accompanied by the cash. And third. We do not knowingly advertise humbugs.

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

Literary Department.

EDITOR'S BOOK TABLE.

THE HUMAN RACE. By Louis Figuier. 8vo. pp. 548, with two hundred and fifty-four illustrations. (D. Appleton & Co.) While this work has no claim to be considered profound, it is nevertheless very entertaining and instructive, containing a vast collection of facts in relation to all the various races which are counted as making up the human family. It is a compilation from the works of others, but not on that account the less valuable, because the compilation is well made. The publishers have added very much to the attractions of an already interesting book, by the way in which they have brought it out. The typography and paper are faultless, the illustrations are very numerous and excellently executed (among them are eight fine chromo lithographs), and the binding is tasteful.

A HANDBOOK OF CHEMICAL TECHNOLOGY. By Rudolf Wagner, Ph. D. Translated from the 8th German Edition by William Crookes, F. R. S. 8vo. pp. 745, with three hundred and thirty-six illustrations. (D. Appleton & Co.) The Appleton Publishing Company are entitled to the thanks of the American public for their well-directed efforts to popularize scientific knowledge, by bringing within the reach of the masses all the newest and most approved works on the various branches of science. The work before us is one of the best, most useful, and most valuable of the number. Dr. Wagner is universally esteemed one of the most learned chemists in the old world, and his *Handbuch der Chemischen Technologie*, of which this book is a translation, is considered the highest authority on the subjects of which it treats. In all that relates to metals; to the application of electricity to metals; to the preparation and manufacture of the various salts and acids; to the manufacture of soap; to the technology of glass, earthenware, limes and mortar; of vegetable fibers such as flax, hemp, cotton, &c.; to the application of vegetable products, including sugar-making, brewing, wine manufacture, distilling, baking, &c., and to the preparation of sugar from beets, tanning, dyeing, heating and lighting, this book will be found a perfect *vade mecum* for the metallurgist, builder, agriculturist, manufacturer and chemist. Mr. Crookes has done his work admirably. He has made a perfect translation.

THE VEGETABLE WORLD. By Louis Figuier. 12mo., pp. 569, with 473 illustrations. (D. Appleton & Co.) This is another very valuable work, giving the physiology of plants; their classification into particular orders or groups, and the principles of the classification; a systematic arrangement of plants and a description of the most important; a geographical distribution of plants, and a glossary of botanical names. The material is for the most part taken from Figuier's work, but it has been arranged and classified differently, so as to convey the information in the clearest and most

instructive manner, and meet the wants of the novice, as well as of the more advanced student. Every agriculturist, horticulturist and florist should secure a copy of this book and study it attentively.

THE EUSTACE DIAMONDS. By Anthony Trollope. (Harper & Brothers.) Mr. Trollope has written a great deal, and considering the number of his novels, has written few that do not possess a high degree of merit. While he never reaches the height to which Bulwer, Dickens and Thackeray have attained as novelists, he occupies a rank not far below them. Indeed, as a delineator of every-day life, and of the thoughts, words and works of humdrum people, he is not surpassed by any modern writer. He has attempted in "The Eustace Diamonds" to write a sensational novel, and has entered a field which is entirely new to him. It is impossible for Trollope to make a complete failure, but he certainly has not achieved a success. There never lived, we believe, so thoroughly mean and disgusting a character as the heroine, Lady Eustace, so consummate a fool as Lord Fawn, or so stupid a coxcomb as Mr. Greystock. The incidents in relation to the diamonds, upon which the whole story turns, are impossibly unnatural, and the *dénouement* is weak and unsatisfactory. We cannot help thinking that "The Eustace Diamonds" is the least entertaining work Trollope has ever written, and that all who have read with pleasure and interest "The Vicar of Bullhampton," "Ralph the Heir," "Can you Forgive her?" and "Orley Farm," will regret that he has written the work before us.

TOWN GEOLOGY. By the Rev. Chas. Kingsley. (D. Appleton & Co.) pp. 238. This is a really delightful little book, written in the most charming style, and filled from cover to cover with important facts explained in simple language, so that all who read can understand. It is the substance of a series of lectures delivered by Mr. Kingsley to the young men of the city of Chester, (England,) where Mr. K. holds a high ecclesiastical appointment. It is not a hand-book of geology, but a key to the rudiments of that interesting science. The preface, which occupies fifty-six pages of the book, is an admirable lecture on the value of mental training, on the importance of a knowledge of natural science, and on the perfect harmony existing between the truths of science and the Word of God.

We commend "Town Geology" to the especial study of young men, and advise those who control the libraries and reading rooms of the Young Men's Christian Associations and other organizations of like character, to supply their members with copies of this pre-eminently good book.

THE LADY OF LYNDON. A Novel. By Lady Blake. (Jas. R. Osgood & Co., Boston.) We have rarely seen a book so entirely void of purpose as this. It has no plot, no incident, no characters worthy of the name, no sensation, no moral, no anything, but one hundred and eighty-nine double-column pages of vapid

twaddle, which no human being could ever be induced to read through unless he was weath-erbound on a plantation, with nothing to read but this book, or the Patent Office Report. It is the dreariest stuff. The wonder is, how its author could write so many pages without ever hitting, even by accident, something that can arrest the attention or please the taste of the reader. It has one valuable quality, we should think: it must be an infallible soporific.

DAVID COPPERFIELD. By Charles Dickens. (Harper & Brothers.) This is the fourth volume of the Harpers' beautiful "Household Edition" of the works of Dickens. In typography, binding and paper, this edition leaves nothing to be desired. It is a marvel of cheapness, too, costing only \$1.50 per volume.

THE DOVE IN THE EAGLE'S NEST. By Miss Yonge, author of "The Heir of Redclyffe," &c. (D. Appleton & Co.) This is the latest installment of the handsome edition of Miss Yonge's popular works which the Appletons have published.

The Appletons have also sent us **THE PRAIRIE**, by J. Fenimore Cooper, of their illustrated edition of the unrivaled works of the great American novelist. The illustrations are from the pencil of F. O. C. Darley, and to state that fact is to convey the assurance that they are excellent.

CYCLOPEDIA OF THE BEST THOUGHTS OF CHARLES DICKENS, compiled from his works and alphabetically arranged by F. G. DeFontaine, (E. J. Hale & Son.) We have received numbers of this book of "elegant extracts" from the works of England's most popular author. The fifth part, which is just received, extends as far as the letter T. The book is well conceived and well executed, and the choice of extracts in the rich field open for selection, displays taste and cultivated discrimination.

LIPPINCOTT'S MAGAZINE for December, completing the tenth volume of this valuable periodical, reaches us well stored with fresh, varied and instructive matter, and among the most attractive papers are two well illustrated articles descriptive of foreign scenery and customs, namely, "Searching for the Quinine Plant in Peru," and "Oriental Sports," by Fannie R. Feudge.

The Leonard Scott Publishing Company have contributed to our book table this past month the October numbers of the **WESTMINSTER** and **BRITISH QUARTERLY REVIEWS**, both of which contain several articles of decided merit. The review of Darwin's "Descent of Man" in the *Westminster* is very able, though we differ *in toto* *calo* from the writer's conclusions, and the paper on "The Present Phase of Prehistoric Archaeology" in the *British*, is exceedingly interesting.

THE ILLUSTRATED JOURNAL OF AGRICULTURE. (Messrs. Marmaduke & Chew publishers, St. Louis, Mo.) Price \$1.50 per annum. We give a very cordial welcome to this new visitor to our office. It is good in substance,

handsome in form, and sufficiently comprehensive in extent to furnish valuable practical information to the farmer, gardener, mechanic, stock-raiser and housekeeper. The illustrations are well executed and pointed, and the work of the editor is ably performed.

BOYLE & CHAPMAN'S MEMPHIS CITY DIRECTORY. We are indebted to the publishers for a copy of this valuable work. We cannot notice it in too favorable terms. It is as nearly critically accurate as any work of the kind can be. The typographical work, binding and paper are faultless, and it contains, besides the directory of names and streets, a quantity of useful and well-arranged information relating to the city, the government, &c. It is embellished with a neatly-executed map of the city, showing all the latest improvements to date. This work was entirely done in all its details in Memphis. It is home manufacture, from beginning to end; and on this account, if on no other, it is entitled to the patronage and favor of our citizens. Heretofore we had to rely on Chicago or Cincinnati for our Directory. It was not thought to be possible that we could get up a work of the kind ourselves. To Boyle & Chapman belong the honor and credit of dispelling this delusion, and proving that Memphis enterprise and skill can produce a directory equal in every respect to any which can be produced in any Northern city, while it is necessarily superior in accuracy.

LITHOGRAPH. We are indebted to the publisher, Mr. A. Lovet, 733 Sansom street, Philadelphia, for a copy of a very fine lithograph, "Goat and Sheep," drawn by P. Moran, about twenty inches by sixteen in size. It is designed for premiums and Christmas presents, and is well adapted to both purposes. It is offered on very reasonable terms to purchasers of a number of copies. Single copies, in black and tint, 50 cents each; in chromo, \$2 each.

ECLECTIC MAGAZINE. (E. R. Pelton, 108 Fulton street, N. Y.) The December number of this deservedly popular periodical closes the 16th volume. It has a full and varied table of contents, culled from the best sources, and is embellished with a portrait of the late Dr. Norman McLeod. The editors promise increased attractions for the coming year.

HARPER'S MAGAZINE. The December number has the following rich collection of papers, (many of them profusely illustrated) suited to the entertainment and instruction of all classes of readers:

Marco Polo and his Book; Contrast; The Dome of the Continent; Malta; Disarmed; The Library of Congress; A Madrigal; The Astronomical Year; In the Seed; The Old Romans at Home; Old Kensington; Reprieve; Recollections of an Old Stager; Improvisations; A Simpleton; The Scottish Covenanters; Hope; The New Magdalen; A Picturesque Transformation; A Flower's Epitaph; Editor's Easy Chair; Editor's Literary Record; Editor's Scientific Record; Editor's Historical Record; Editor's Drawer.

Insurance Department.

Is It Best to Renew?

Millions of dollars are paid over annually to the families of those who are thoughtful enough to insure their lives; millions more would be paid if all who take out policies of insurance were careful to pay premiums as they fall due.

It is impossible to over-estimate the value of life insurance. Only when one looks upon scenes of misery and suffering, and such as promise long continuance, knowing that by a single act of self-denial all might have been prevented, does he recognize the power which lies in this easy method of providing for the future.

Why, then, stop and debate about the advisability of keeping an insurance policy in force?

If it be a question of economy, we ought not to begin where we should leave off. Prudence dictates that we should, if we wish to economize, begin with sacrificing our luxuries; but here is something, which, among the necessary things of life may be compared to bread, fuel, clothing; for, only a little way on, it means all these. These are what the annual premiums purchase; in fact, it may be said that each payment we make is purchase-money; it buys a certain amount of the essential necessities of life, through long distant years, supplying the home with what our hands supplied in peaceful days of prosperity, and beautifying it as we would have done had we lived.

Think, for a moment, how little life insurance costs. How many families are there, in ordinary circumstances, that cannot save, if they choose, two dollars a week? The premium looks large only when seen in the gross. Divide it among the days of the year, and how small it appears.

In deciding whether or not to go on paying premiums, it might not be amiss, too, to consider whether the policy has ever been of any possible good to the individual himself. Few men, in business, pass through life without being compelled to acknowledge that, at some period, the policy was worth all it had ever cost in the tranquillity and peace it afforded them as they contemplated the ruin of their affairs.

Every man should settle it in his mind to keep his life insurance; and, having decided this question, there should be no further debate. It should not be opened up anew every year. Such action is childishness and folly.

Having once decided that money spent for life insurance is well spent, the annual premiums should be paid cheerfully and promptly. On the part of the insured, the payment is as sacred an obligation as is the payment of the policy on the part of the company after it has become a claim.

And is there any difference between a debt due on a policy and any other debt? If one buys a farm or a house, giving notes as a part payment, he expects to pay the notes on the day of maturity, and he makes arrangements accordingly. He pays them, too, promptly. He pays in order to comply with the terms of the contract—because he agreed to pay.

Precisely so ought he to pay his premiums. He has agreed to pay them on a given day, and he can do it if he will. All that is required is a little attention, and the work is done.

The evil attendant upon the habit of putting off payment is very serious. In nine cases out of ten, the habit becomes fixed, and then the policy is soon allowed to lapse on account of non-payment. Thousands have lost their policies of insurance, and left their estate bankrupt and their families penniless, who really intended to keep their policies in force.

"Is it best to renew?" Well, if insurance has ever been worth anything to you; if you ever regarded it of value; if it has protected your interest in the past, and you have derived satisfaction therefrom—then certainly it must be of as much importance now, for the years are passing, and you have a less number of premiums to pay than when you began. You may have accumulated property, it is true; but even this fact ought not to prevent you from renewing your policy. Fortunes are not always permanent, as was witnessed by the great Chicago fire, where vast estates were blotted out in a night.

If ever any reason existed why you should insure your life, in all probability the same reason exists now. Do not, then, doubt or question, but renew at once. What a day or year may bring forth, no man can tell; but one thing is certain, the life policy is good property. Keep it in force.

An old agricultural laborer in England tried a singular method of evangelizing his family. Being remonstrated with by the pastor for not "bringing up" his boys as he should, he replied, "I dunno ow 'tis, sir; I order 'em down to pray, night and mornin', and when they won't go down, I knocks 'em down—and yet they ain't good!"

For the Southern Farm and Home.

Saving Pea-Vines for Forage.

This should be done before too many pods have become ripe, so as to prevent loss in handling. So soon as about half the pods have ripened on the vine, the vines should be cut from the roots, and immediately be hauled to the barn-yard and scattered, so that the air can circulate through the various bundles. If the corn rows are wide enough, say seven feet apart, the row of peas being in the middle, the vines of three rows may be put into one row, as fodder, the wagon or cart taking an empty middle row and being carefully driven, but a little corn will be touched by the wheels. The vines being cut, they may be made into bundles by using a hoe or hoe-rake, or iron fork, and the bundle of each of the three rows, being put together in the center row, will form a wisp or bundle of sufficient size for raising from the ground to the wagon—also to lie upon the barn-yard in depth, so as to dry easily and thoroughly in two days of good weather. The wagon, loading in the field with green vines, should be started at one end of a row and go forward to the other end, unless a road or traveled path should intersect, so that as little corn as possible shall be thrown upon the ground. As many as four heap rows may be carried along together to load the wagon, and the bundles of vines may be nicely and easily managed with iron forks; thus, nearly all the waste of leaves and broken-off peas will be left in the barn-yard, where pigs may hold a feast as long as the gleanings lasts. In this way more forage and much better forage can be saved in one day than the same hands could save in fodder in five or six days. A slight sprinkling of salt thrown upon the various turns or bundles as they are being packed away into the barn will add greatly to their value. If rain should fall upon the vines in the barn-yard before they have dried, the bundles should be turned over, or a rack made by a pole resting upon forks set into the ground, and the vines thrown across, and there remain until they are in condition for packing away into the barn. When being used as forage, these bundles should be cut to pieces—say by a common chop-axe across a beam in the barn—and may then be easily cut finer by running them through a straw-cutter. Our crop of fodder is so small this season that farmers would do well to look to their pea-vines. C.

TWIGGS COUNTY, GA.

Correspondence of the Southern Farm and Home.

PULASKI COUNTY, GA., Nov. 10, 1872.

As we have got our cotton gathered we can give a more definite estimate of the yield. I think from what planters say that fully a half crop has been made. Some estimate the crop at three-fourths, but that I think is entirely too great, from the fact that nearly every planter in this county has finished gathering—something unknown to the present generation of young farmers.

Our potato crop has been almost a failure, some patches hardly yielding the seed planted. Sugar cane, like all other crops, has suffered from dry weather, though very little planted.

Respectfully,

R. T. B.

COLONEL CLIVE'S WIFE.

[CONTINUED.]

There was writing upon this; and Harold opened it, and held it up to the light. It was in Edward Sartoris' handwriting, and it was a certificate of Harold Clive's marriage with Laura Sartoris at Aberdeen, on the 10th day of November, 1865.

I will not say what Clive did or said after that. It was as well, perhaps, for some reasons, that the old deaf man in the other corner slept peacefully under the yellow bandana; for he had eyes, at least, if not ears. But this much may be told. Although the Colonel contrived to fasten the locket securely on to his watch-chain, he nevertheless held his hand lovingly over it during the rest of the journey.

Meanwhile the train sped on at a tremendous pace through the darkness and the rain and the wind. In spite of the obscurity, the black clouds could be seen scudding rapidly across the sky. Once or twice there was a slight break, and the moon made a desperate effort to show herself for a few moments; but then there would come a fiercer squall than ever, and the rain would beat in a perfect deluge against the carriage windows.

On they went, through the chalk-hills of Croydon and Reigate, through the beautiful hop-gardens of Kent, the bare stacked poles looking weird and desolate enough now, in the fitful, fantastic light thrown upon them by the engine-lamps.

On they went, never stopping once, never slackening speed, even, except now and then as they passed through some brightly-lighted station, which looked as cheerful as an oasis in the desert, compared with the surrounding darkness. Past Folkestone; and as the train dashed on by the side of the sea, they could hear, above the noise of the wind, the roaring of the waves as they fought together which should be the first to break upon the little bit of shingly beach which lies under Shakespeare's Cliff and the high chalk-hills of Kent.

On through Dover station; then more slowly past the Lord Warden, where the glare of a hundred lamps, streaming through the uncurtained windows of the coffee-rooms, threw a blaze of light for at least fifty yards around in every direction, till at last they came to a full stop half-way down that grand work of modern times, the Admiralty Pier. Oh, what a comfort it was to stop at last and breathe!

The tide was ebbing fast, and the two mail-boats were moored a long way down the pier, on the harbor side. Happily for the Ostend and Calais passengers, just at the moment when the train discharged its living freight, there came one of those breaks in the clouds of which I have spoken, and they had the benefit of

"The struggling moonbeam's fitful light,"

as well as that of the flickering gas-lamps, to assist them in the descent of the slippery, sloppy, sea-weedy steps, which led from the pier to the mail-steamers.

When Colonel Clive, after standing for a minute or so by the carriage he had just left, walked slowly on, and reached the top of this flight of steps, he found his farther progress arrested by a lady and gentleman, who, after the fashion of nervous travelers, were putting a number of questions to a sea-faring man who was standing by about the state of the weather, and receiving rather a larger amount of truth than usual in reply.

"What sort of a passage do you think it will be, sailor?" asked the lady, timidly.

"Tidy passage, marm; you'll find it a little roughish on the other side."

"You don't call it a *very* bad night, I suppose?" remarked the gentleman.

"Well, it *be* a dirty night; I can't say that it bain't," replied the sailor, in a confidential tone. "There's been a nasty popple on the sea all day, and the wind's a-getting up." He would have spoken more correctly if had said that it had got up.

"What boat is going?"

"The *Samphire*," (pronounced "*Sarm-phire* in the man's broad Kentish dialect.)

"Oh, dear! is n't that a *very* bad boat? Does not she roll *very* much indeed?" suggested the lady, humbly.

"Best boat on the station, marm; that's what *she* is," said the man, turning away indignantly.

"Oh, Charles, don't you think we had better stop at the Warden and go over by daylight?" the lady pleaded, turning to her husband.

"My dear, my dear, you really are so very nervous," he replied; "you should have thought of all this before we left town. Of course we can do as you please about stopping here to-night; but if we do, it will be entirely on your account. For my part, I don't mind how rough it is."

(He *did*, though. In less than half an hour afterward he was rolling about in the agonies of sea-sickness, anathematizing his poor wife, who was suffering more silently on the next sofa, for ever wanting him to go to France at all, and devoutly wishing himself every few minutes at the bottom of the sea.)

"Now then, marm," said the sailor, not disrespectfully, "please to step aside, and let these other ladies and gents go by."

While the undecided couple still lingered, discussing the advisability of crossing that night or not, some of the other passengers by the Southeastern train slipped by and went down the steps, among them the old deaf gentleman, the lady in the red hood, and the party with the nurses and children, the baby still shrieking vociferously, as it had probably shrieked the whole way down in the train.

Harold Clive followed leisurely, carrying his traveling-bag, and with his shepherd's plaid flung over his arm.

"Please to step on, sir," observed the sailor, accosting him. "We ain't got no time to lose."

"How's that? What's all this hurry about?" inquired Clive. "We were seven minutes before our time at the pier."

"I know you was, sir," replied the sailor, speaking in a different tone when he found he had a different sort of man to speak to; "and the Victoria people has been aboard better than a quarter of an hour, already; that's because we telegraphed hup. But we shall shove off the moment the luggage is got aboard, for fear of missing the tide at Calais."

"I thought you could always make the pier now?" remarked Harold, carelessly.

"So we can, mostly always; but there's just a time, nows and thens, when the tide's a-running out of the harbor fast, and the wind's a-blowing in one particular direction, when it ain't no mortal use a-trying to shoot the bar. And it's a-blowing in that particular direction now."

Harold walked on rather faster after hearing this, and overtook some of the other passengers before they had reached the bottom of the stairs. The water even in the harbor was rough, and the steamer was rolling uneasily from side to side. The gangway, poised at an angle of nearly forty-five degrees, rolled with it, and afforded an unsafe footing for the passengers in the uncertain light.

As Colonel Clive was crossing it, the lady in the scarlet hood, whom he had noticed before, and who was just in front of him, made a false step, and almost fell. But for his arm, which was instinctively stretched out to save her, she would have fallen.

"I hope you have not hurt yourself?" he exclaimed.

She murmured something in reply, whether in French or English he could scarcely make out, and then, without even turning her head to thank him, walked straight down the companion stairs and into the ladies' cabin. Her manner struck him as being a little uncourteous, but he fancied she might be ill; indeed, he did not trouble himself much about it, for the next moment his attention was engrossed by something quite different.

A gentleman had run on board the boat just after him, and was calling out to the sailors in a loud voice,

"Here, Jack!" he cried, "I've got my little lame boy in his carriage on the pier up there. We've managed to get him to the top of the steps, and now I want four of you fine fellows to carry him on board. You'll do it better than the landsmen. I'll give you a shilling a wheel. Which of you'll go?"

Fine fellows he might well call them. A dozen of them would have gone, with or without the shilling; they never would have stood for that. They went scrambling over the gangway and up the steep, slippery stairs like a swarm of bees, and in another minute four of them had lifted the little lame boy in his invalid carriage on their strong shoulders, and were carrying him down to the steamer.

The poor little lad—a child of about seven or eight years old, who had been lame from his birth, and quite unable to walk—startled

at the sudden change of position and at the strange faces round him, put on a very frightened look, and seemed just ready to cry. In vain the bright, merry-looking sailors nodded at him and told him to cheer up. The little lips only quivered more and more, until a hand was held out to him between the sailors' shiny caps, and a voice he knew and loved well called out, "All right, Tom, my lad; here I am close by!" And the poor little fellow looked round, caught hold of his father's hand, and was comforted.

Harold watched the father when, after thanking the men, he lifted the child out of the carriage and carried him in his own arms down the cabin stairs; and the thought struck him that, except under the pressure of necessity, it would have been wiser to have made the passage with an invalid like that on a calmer sea and in the daylight.

The last passenger was on board new, and the captain sang out in a loud voice to let go the ropes. Then, without another sound, the *Samphire* slipped quietly from her moorings and steamed away to France.

Away—past the last stone of solid masonry, past the forest of piles beyond, where the diving-bells go up and down twice in a day, and the great steam-engine above goes on snorting and puffing from morning till night, sending the air, which is the very breath of life, through the tubes to the poor fellows at the bottom, who work for six hours at a stretch, fitting together those great blocks of granite at a depth of sixty feet below the sea. There was nothing going on there now, of course; there would have been nothing doing even in broad daylight in such a sea as that; for the waves were dashing and tearing through the piles as though they would uproot them, strong as they were, from their very foundation. Harold watched them, as he stood on the deck, with a curious sort of smile. It was just among such piles as these that Philip Anstruther's hat had been found wedged the morning after his strange disappearance.

If that hat had never been found, how different the current of his own life might have been!

He watched the long line of gaslights—which make the Admiralty Pier, when seen at night from the western heights, look like a great illuminated serpent lying upon the sea—go out one by one; he saw the red lamps of the engines move slowly back along the ground, like creeping fireworks, to their respective stations (they would not be wanted again till three o'clock the next morning, when the return boat from Calais was due); and then at last he could see nothing more except the few flickering lights upon the old Castle Hill; and he turned away his head, wondering a little sadly how long it would be before he should see that English shore again.

The moon had disappeared once more behind a cloud, and, five minutes after, down came another blinding shower of rain and sleet. At the same moment a wave struck the *Samphire* which drenched the boat from stem

to stern, put out Colonel Clive's cigar, and sent that gentleman, for prudential reasons, to seek the shelter of the black-hole below stairs, ycleped the cabin. He was too good a sailor, and had been tossed about on too many stormy nights at sea, to care much about the short Channel passage, trying as it unquestionably is; but the sights and sounds which greeted him when he entered the cabin might have driven him in desperation to the wet deck again, but for something which attracted his attention during his brief glance around.

The little lame boy he had seen carried on board was lying on a sofa exactly opposite the door, and, with the instinct which made all children love Harold Clive, he turned his eyes wistfully upon the new comer, and seemed silently to entreat him to stay. The child did not appear to be seasick, but he looked very scared and lonely. His father had already succumbed to the prevailing malady, and seemed very helpless and unable to speak to him. Still, one of his hands was passed lovingly round the child's neck, and Colonel Clive saw that on the little finger of this hand there was a plain gold wedding-ring. He was a widower, then, though still a young man, and perhaps this was his only child. Harold's heart warmed toward the poor little motherless cripple, and, going up to the gentleman, he said, kindly:

"If you were to lie down altogether, Sir, and shut your eyes, you would suffer less. I'll look after this little lad, and see that he comes to no harm. I'm a good sailor myself, and used to children."

The father looked up into the speaker's face, and trusted him, without any other letter of recommendation; he made a mute gesture of thanks, and did at once what he had suggested.

Then Clive dropped into the seat he had vacated, and in five minutes more the boy Tom and he were fast friends.

He told him stories of elephants, of tigers, of snakes, and of all the wonderful creatures and things he had seen in India and other parts of the world. The little fellow listened eagerly, with eyes wide open, and full of interest. All of a sudden he caught sight of Harold's bright new locket, and laid violent hands upon it.

"Let me see!" he exclaimed, with all the pretty willfulness of a child.

There was a moment's struggle in the owner's heart before he could bring himself to exhibit his treasure to those little eager eyes; but presently he touched the spring and opened it.

"Oh, what a pretty lady!" said Tom.

"Is n't she pretty?" said Harold warmly, pleased even with the child's praise of his darling; "and she is as good as she is pretty, too. She would be so kind to you, Tom, if she knew you."

"Would she?"

And then the two went on talking again of other things, till it ended by Tom's falling fast asleep on his new friend's shoulder, his face almost hidden in the soft warm fur of Harold's coat.

[TO BE CONTINUED.]

Answers to Correspondents.

IS SALT A FERTILIZER?—A subscriber, in Barton County, Ga., asks what are the fertilizing properties of salt—for instance, what good does it do to wheat?

Salt is composed of chlorine and sodium, which are to be found in all plants, and, according to Prof. Johnson, liberates potash and ammonia in the soil and makes them available as plant food. Salt is valuable as an absorbent of moisture, and is therefore a protection against drought. Experienced wheat growers have found that a broad-cast application of four or five bushels of salt per acre will materially increase the yield, and will also act as a preventive of rust and smut.

ORCHARD GRASS.—W. W., Panola County, Miss., is going to try to raise orchard grass and clover in a large grove near his house. Wants to know; first, how much of each to sow; second, when to sow them; and, third, must the land, which is rather poor, be enriched?

We advise our correspondent to sow two bushels of orchard grass seed and five or six quarts of clover seed, mixed together, per acre. Heavy seeding is necessary to a good stand and fine hay. The best time to sow is early in the spring. If the ground is not rich it ought to be made so by the application of manure or of a good commercial fertilizer.

HYDRAULIC RAMS.—E. W. S., Abbeville District, South Carolina, asks what is the price of a good hydraulic ram?

The expense of the ram proper need not exceed \$30. The pipe, which is generally the most expensive part of the arrangement, depends, of course, on the distance of the spring or stream from the point to which the water is to be conveyed.

THE USE OF LIME.—J. R., Baldwin County, Ga., inquires how to apply lime, whether slaked or quick, and how much per acre. Ought it to be plowed in or left near the surface?

It should be applied in a slaked state, at the rate of fifteen or twenty bushels to the acre. It should be spread as evenly as possible and should be kept as near the surface as possible.

EPIZOOTIC.—"Inquirer," Byhalia, Mississippi, wants to know the precise etymology of "epizootic."

Epizootic is an adjective, meaning relating to or affected by "epizooty." The latter word, derived from the Greek words, *epi* (upon) and *zoon* (an animal) means a disease among animals. It is an error to use the word epizootic as a substantive to express the new disease among horses, just as much as to use the adjective zoological to express zoology.

KEROSENE LAMPS.—B. P., Fayette County, Miss., asks whether the so-called "Safety Lamps" are really any protection against the dangers of adulterated oils which are sold for pure kerosene.

We have used the German Students' and Perkins' Safety Lamp, and found both excellent, but we also took the precaution to use none but non-explosive oil. We are well satisfied that the danger is more in the oil than in the lamp and that adulterated oil cannot be safe in any lamp.

CALCULATION OF HORSE POWER.—"A Young Miller," near Winchester, Tenn., asks for an easy rule to calculate the horse-power of a stream of water for a mill-race.

The last number of the *American Agriculturist*, answering nearly a similar question, gives the following answer, which is the plainest and most concise answer we have ever seen:

"A nominal horse-power is equal to the raising of 33,000 pounds one foot high per minute, and theoretically the force of a falling body of that weight through that space in that time would yield one horse-power. Thus, if 33,000 pounds of water fall one foot in one minute, or 1000 pounds fall 33 feet, or any multiple of feet or pounds that will amount to the given sum of 33,000 (which is called 'foot-pounds'), there will be one horse-power, theoretically, or about three quarters practically. If the number of feet passed over by a stream in a minute be multiplied by the number of square feet in its cross section, and by $62\frac{1}{2}$ (equal to the weight of a foot of water), the result will be the weight passing over a dam in that stream per minute; and this divided by 33,000, of course gives the horse-power. It depends on the kind of water-wheel used, what proportion of this power (from 50 to 90 per cent.) may be utilized."

SLOBBERING IN HORSES FROM EATING CLOVER.—J. O. B., Montgomery Co., Va., asks whether the cause of slobbering in horses from eating second growth clover has ever been discovered; if so, what is it, and how can it be prevented?

Several supposed causes have been discovered, such as the growth of certain weeds with the clover, and the existence of parasite insects on the plants, etc.; but we do not believe the true cause has ever been ascertained. The slobbering may be cured by ceasing to feed the second growth of clover, and giving the horse bran and salt with dry fodder or good hay.

CHROMOS.—"A Lady Reader," Monroe Co., Ark., inquires whether Prang's chromos are not the best?

Prang's chromos are certainly very good, but we are not prepared to say that the works of other publishers are not as good.

DEAR FARM AND HOME—Can you procure for me from your correspondent "Mrs. Elizabeth Dustbrush" her receipt for "dressing turkey with chestnuts," the result of which "is so like French truffles?" I have been for a few months rustivating among the mountains, where I find the crop of this highly esteemed nut very abundant, and am anxious to test its value in a culinary point, and am induced to call on Mrs. D. for the necessary information, hoping by her kind and generous advice to be enabled, on my return home, to present to my friends at my board a dish of "turkey and chestnuts," together with many esculents, the products of these rich valleys of the mountains. The Irish potato should be mentioned, the tubers of which cannot be excelled.

Most respectfully,

A CONSTANT READER.

Chestatie, Nov. 9, 1872.

We have written to Mrs. Dustbrush, to request her to give us her receipt, and hope to be able to publish it in our next. We regret that severe illness has prevented Mrs. D. from contributing to the *FARM AND HOME* for some months. She promises to resume her pen for our benefit as soon as her health will permit.

Vol. IV. No. 3.



THE
SOUTHERN

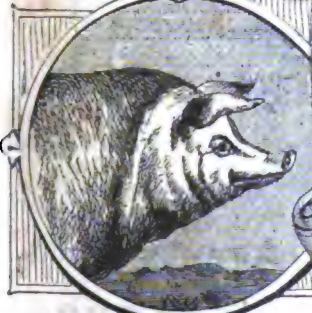
FARM AND HOME



JANUARY, 1873.

W. M. BROWNE, EDITOR.

PUBLISHED BY
BOYLE & CHAPMAN,
MEMPHIS,
TENN.



NEW CROP SEED! SEED!

FOR FALL SOWING

JUST RECEIVED BY

R. G. CRAIG & CO.,
MEMPHIS, TENN.

Red Clover, - - - \$3.00 per bush.
Sow 10 lbs. to the acre.

Orchard Grass, - \$3.00 per bush.
Sow one bushel to the acre.

Herds Grass, - - \$1.75 per bush.
Sow one bushel to the acre.

Blue Grass, - - - \$2.00 per bush.
Sow one bushel to the acre.

Timothy Seed, - \$5.00 per bush.
Sow one bushel to four acres.

**White Clover, }
Alsike Clover, } - - 75 cts. per lb.
Lucern Clover, }**
Sow six lbs. to the acre.

Seed Rye, - - - \$1.15 per bush.

Seed Barley, - - - \$1.25 per bush.

Seed Wheat, - - \$2.25 per bush.

*In all cases Sacks will be charged extra to
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No. 1, 7-in. cut (steel point and land side), \$ 8 50
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No. 1, A, B or C steel point.....\$1 50
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No. 4, steel cotton sweep..... 3 50
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Improvements have been made from time to time upon the "Brinly Universal Plow." These changes are indicated by the letters A, B, C, etc.; therefore, persons ordering extra standards and points must be careful to give the letter as well as the number, also the date of the patent on the casting to be replaced, and state whether your plow is straight or crooked beam, and give the number of the kind of upright.

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Prepared from rare Essential Oils, Extract of Camphor, Extract of Arnica,
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The great success of this powerful penetrating Fluid warrants the proprietors in pronouncing it the greatest Liniment extant. It is a penetrating Fluid, which passes immediately through all the tissues, muscles, and to the bone itself. Its action upon the Absorbents is not to seal them up, as other liniments do, but to open them and increase the circulation. It is based upon scientific principles for cure or natural restoration of all organic derangements, whether in man or beast. Send for a Circular bearing the evidence of its wonderful efficacy, from the following well-known citizens of the South:

COL. PHIL. B. GLENN, of Shelby county, Tenn. Cured him of Spinal disease.
T. E. BRINLY, Plow Manufacturer, Louisville, Ky. Cured him of a serious hurt received from a fall.
A. C. LANE, Horn Lake Depot, Miss. Cured him of Paralysis.
COL. S. J. WADLEY, Iuka, Miss. Cured him of a hurt of eleven years' standing.
COL. D. H. C. MOORE, Dardanelle, Ark. Cured his wife of rheumatism.
M. V. BOGAM, Olive Branch, Miss. Cured of neuralgia. Had suffered three years.
B. BOCK, Hannibal's Crossing, Miss. Cured of neuralgia and rheumatism.
GEORGE M. SANDERS, Madison Station, Ala. Cured of rheumatism of twenty years' standing.
DR. ALFRED MOORMAN, Sacramento, Ky., writes: "Your Liniment gives universal satisfaction."
DR. J. W. TERRY, Dukesdom, Tenn., writes: "Your Magic Arnica Liniment gives great satisfaction."
Hundreds of others have published their testimony to its great merits.

THE LADIES' REMEDY.

Dr. Jackson's Female Vigorator:

A REGULATOR,

UNSURPASSED FOR THE CURE OF DISEASES PECULIARLY INCIDENT TO WOMEN.

The enlarged experience of Dr. Jackson, who made the Diseases of Women a specialty, made him eminently successful, and to that experience and success we are indebted for the happy combination known as his

FEMALE VIGORATOR.

This Preparation is intended specially for the Cure of Female Diseases, such as
CHLOROSIS, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION, SUPPRESSED MENSTRUATION, LEUCORRHEA, UTERINE ULCERATION,
And all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really believed that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and these who are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and similar affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a faithful trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. See that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

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THE VERY BEST LUNG MEDICINE EXTANT.

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This valuable compound is no secret preparation. Its ingredients are well known, and what is better, have been well and successfully tested. Read the list:

WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR, HOARHOUND, LUNGWORT, SQUILLS, SENEKA, MATICO, LOBELIA, ENGLISH WOOD NAPHTHA.

The most scrupulous care is observed in selecting the above materials, in order to secure the full medicinal powers of their active principles, and we claim that the HUNGARIAN BALSAM OF LIFE has not only the happiest and most effectual medicaments for its composition, but that it contains the LIFE of each ingredient in perfect combination. Wood Naphtha has attained a wonderful reputation for its powerful renovative powers in CONSUMPTION; but the numerous inferior articles and imitations called by its name have almost crowded out the pure and much more expensive genuine, and, in consequence, the latter is seldom accessible to the majority of the people. It is guaranteed that none but the purest and best English Wood Naphtha is used in the HUNGARIAN BALSAM OF LIFE, and the Proprietors can show, by VOLUMES OF EVIDENCE, it stands positively unrivaled for

THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA, WHOOPING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

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For Sale by Druggists and Dealers in Medicines Everywhere.

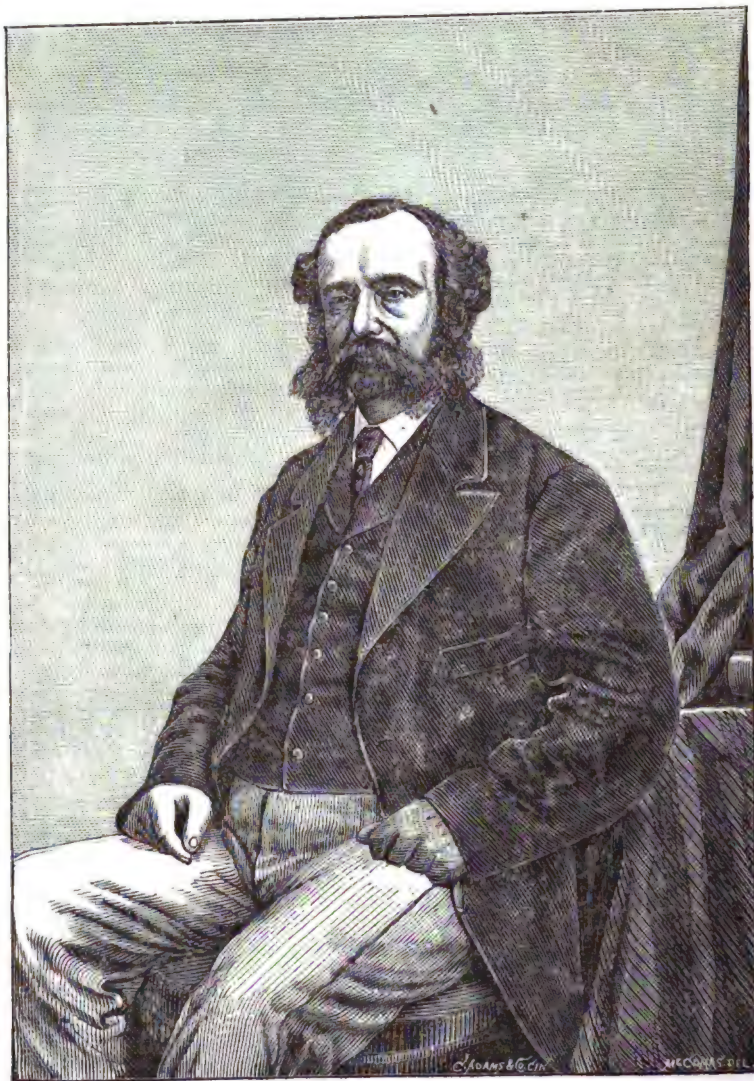
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Nickel Hampton

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV. MEMPHIS, TENN., JANUARY, 1873.

No. 3.



A Happy New Year!

A happy and prosperous New Year to every reader of the *FARM AND HOME*! May you be happy round your family altars, happy in the comforts that surround you, happy in the enjoyment of peace and plenty and contentment, happy in the possession of a conscience void of offense to God and man, and happy in the exercise of the power to diffuse the benevolent influences of your calling among those who are less fortunate than yourselves—to smooth the thorny path of poverty and to lighten the burden of labor. May you be happy in your bright anticipations, happy in your bounteous returns, and happy in your constant praises of Him who sends the seed-time and the harvest. To each and all of you, my kind readers, a happy New Year!

Farm Work for the Month.

The season for planting is approaching rapidly. This is a good time to review our past operations—see wherein we have succeeded and wherein we have failed—and apply this experience in making our preparations for the year that lies before us. In the first place, let every foot of soil that we intend to plant be thoroughly prepared before we put a seed in the ground. Set the plows at work at once. Use none but the best. See that the mules, harness, everything that is needed, are in good order, and let the effort be to do the work well. A few acres properly prepared at this

VOL. IV, No. 3—1.

time are worth a great many acres scratched hurriedly just before the time comes to plant.

The next thing in importance is to avoid the too common error of planting a greater area than can be properly cultivated. Overcropping is one of the most fruitful sources of failure in planting. From twelve to fifteen acres to the full hand are the outside limit of the number which our present laborers will attend well.

MANURE.

This is the time to commence hauling manure to the fields. Where there is a large pile—and we would that this were the case on every Southern farm—it is a heavy and slow job to transport it to the fields and distribute it.

OATS.

It is much better to sow spring oats in the middle or latter part of this month, than to wait for February or March, as so many do. We are great believers in oats as one of the most nutritive, wholesome and economical forage crops we can raise. Whether we have sown fall oats or not, we can find room for a patch of spring oats. Prepare the land well; if it be poor make it rich with cotton-seed or some other manure, buy the best seed, and sow thickly.

CLOVER.

We would urge those of our readers who have not yet tried to have a clover field, to make the experiment now. Sow with oats or rye which is sown for seed, or sow on wheat land that is in good order. Buy the seed only from a reliable seedsman, and sow plenty of seed. Two gallons per acre are not too much.

REPAIRS OF FENCES, ETC.

Have no unrepaired fences, no rotten or hingeless gates, no broken-down stables or sheds, no unserviceable implements, when the

active work of planting begins. If attention has not been already given to these matters, there is still time, provided the work is no longer delayed.

SHELTER FOR CATTLE.

Although we can truthfully boast of our genial climate as compared with the snow and ice-bound north, there are many days and nights even in our sunny land when our stock should be under warm shelter. Economy and humanity combine to urge us to protect the stock from the biting blasts, keen frosts and driving rains. It is no reason, because we have not a six months' winter, that we should not provide for our animals during the short time that such provision is needed.

HAULING.

Whatever hauling there is to be done from the depot, river-landings, or saw-mill, let it be done before all the teams and working force are required for field work. We fear that there are several of our friends whose smoke-houses are in Cincinnati, whose corn-cribs are in Illinois, and whose meadows are in New York or New England, and whose supplies are still to be hauled home. They may be ashamed to own that they make their meat, bread and hay so far from home, and may desire to postpone the exhibition of their error as long as possible. But it is better to "own up" at once, or they may escape being found out if they will do the hauling some frosty moonlight night, when the neighbors are asleep. If we had to haul New England hay to feed our stock, we should feel very much like trying to do it on the sly.

Our Country Homes.

There is no season of the year when home and home associations have greater influence than at present. Throughout the christian world, Christmas is set apart for home enjoyment, when families are united, differences and disputes forgiven and forgotten, cares and troubles laid aside, and the thoughts, words and deeds of all combined to bid love, peace, contentment and plenty to dwell with us and preside at our firesides.

This, then, is a good time to say a word in behalf of the homes of our farmers, that instead of the unsightly, uncomfortable, and inconvenient buildings which are now dignified with that name, cheerful, commodious and tasteful structures may be erected, with which the wives and children of our farmers may asso-

ciate ideas of comfort, beauty and pleasure, and not the associations of discomfort and ugliness which now connect themselves with the farm house, and make the farmers' sons and daughters so eager to leave the country and come to live in the towns and cities.

The influences of a pleasant home have a large share in the development of the youthful mind. Accustomed from infancy to consider home as the point of greatest attraction, where the heart first found the gratification of its aspirations for the beautiful, where the earliest lessons of morality and religion are associated with flowers and fruits and climbing vines, and glowing firesides, and domestic comfort and contentment, the young men and women would be reluctant to leave the place which is so identified with their happiness, or to forsake the calling and way of life in which they have been brought up. We do not wonder, however, as we look at the comfortless, ill proportioned, shadeless, flowerless, ill furnished concerns which shelter our rural population, that the boys and girls make haste to abandon them as soon as an opportunity offers, or that they are thoroughly disgusted with an occupation which has no higher aspiration than to accept such shelters as dwellings.

It does not cost a dime more to build a commodious house, marked by elegance and good taste than to build such houses as we are denouncing. We do not recommend an imitation of the ostentatious village and town residences, generally built after plans drawn for another latitude and in no way suited to our climate, but cosy, well proportioned, well built, and neatly painted houses, arranged with a view to convenience and comfort, with their broad verandahs, projecting roofs, neatly modeled chimneys, tidy palings, graceful flowers and grass plots, with adjacent orchards and gardens. If we would encourage our sons to be contented farmers and our daughters to be good farmers' wives, we must pay more attention to our homes. If we would elevate the character and dignify the occupation of the agriculturist in our own estimation and in that of the public, we must surround ourselves with the signs and tokens of refinement and good taste. We may persuade a young man that a farmer's life is pure and noble, when we point to a home of elegance and beauty such as we have sketched above, where he sees joy and love and contentment enshrined, but no eloquence can persuade any one that there is much to be enjoyed in the life of those who year after year live in the average farm houses which are to be found in our country.

A MANUAL*

Of the Cultivation of the Grasses and Forage Plants at the South.

BY C. W. HOWARD.

[CONTINUED FROM DECEMBER NUMBER.]

PROPER MIXTURE OF GRASS SEEDS FOR DIFFERENT PURPOSES.

For a rotation and to improve the soil, red clover and orchard grass—four quarts of clover and one bushel of orchard grass and one bushel of meadow-oat grass. These grasses are selected in connection with clover because they mature rapidly; a slow-spreading grass like blue grass would not answer in a rotation when the grass would occupy the ground only two or three years. These two grasses produce in the run of a year, a vast quantity of vegetable matter. The chief value of the clover is the amount of ammonia which it draws from the atmosphere, and by the decay of its roots and leaves imparts to the soil. These grasses would give an additional sward, which turned under would supply a large amount of humus, so necessary to our denuded and exhausted soil. The sward of both these grasses, being in themselves rich food, when turned under, makes rich soil. The farmer should always remember that plants differ greatly in their value as manures. All vegetable matters plowed into the soil are a manure, but their value differs as much as our currency and gold. Both pass as money, but there is a material difference in their value. The same remark holds true as to the value of the manure of animals fed on different kinds of food. One-fourth of the manure of an animal fed on cotton-seed meal, will go as far in enriching a soil as the whole of the manure of the same animal fed on shucks or straw.

GRASS SEEDS FOR MEADOW LAND.

One peck of timothy, four quarts of Herd's grass, and four quarts of white clover per acre. If it be desired to obtain immediate results, four quarts of red clover may be added. This will disappear in two years if it be mowed so as not to be allowed to seed. For a permanent purpose the addition of red clover is not judicious, because, as has been previously remarked, it is ready for the scythe long before either timothy or Herd's grass. It should be borne in mind that the word meadow is generally applied to bottom land in grass. When upland

is mowed it is usually designated as upland meadow. Neither timothy nor Herd's grass are suitable for mowing on upland.

FOR SUMMER PASTURES.

Our best summer pastures are Bermuda and crab-grass. Red clover is valuable during the spring and autumn. Herd's grass will give fair summer pasture on upland, especially on north hillsides; white clover is extremely valuable for certain kinds of stock; but like red clover, after the seed has been matured it salivates horses. Little reliance can be placed on the cultivated grasses for summer pasture; we are, however, abundantly supplied with natural grasses

FOR WINTER PASTURE.

Meadow-oat grass, orchard, blue and Terrell grass, or wild rye, and red and white clover. One bushel of orchard, meadow-oat and wild rye, each, four quarts each of blue-grass and red and white clover. The blue-grass and white clover will ultimately take possession of the soil. This winter pasture should not be grazed after June or before Christmas.

FOR EARLY SPRING SOILING.

Lucerne comes very early in the spring, and may be used then for soiling and afterward for hay. A still earlier soiling reliance would be a half bushel of barley, a peck of Italian rye-grass, and the same of winter vetches. For this purpose land should be made very rich. On such lands, in most parts of the South, this mixture can be cut in February. In the absence of permanent winter pastures it would be found of great value to the farmer. It has this advantage, that its results may be realized within a few months after the seed is sown.

SELECTION OF SEEDS—BUYING BY WEIGHT OR MEASURE, WITH A TABLE OF WEIGHTS.

One of the great drawbacks to grass culture at the South is the cost of grass seeds. It is of the utmost importance, therefore, that the grass seeds should be good. Gross impositions are often practiced upon us by the seedsmen. Grass seeds three years old are unreliable. Old seeds are often mixed with those that are fresh. The fresh will vegetate, the others will not. The farmer attributes the bad stand to the bad climate or his bad management, when it is attributable to the bad seed.

Flint gives an easy way of determining the freshness of grass seeds: "Take two pieces of thick cloth, moisten them with water, and place them, one upon the other, in the bottom of a saucer. Place any number of seeds which it

*Entered according to Act of Congress, by C. W. Howard, in the Office of the Librarian of Congress, at Washington, D. C.

is desired to try upon the cloth, spreading them so as not to allow them to cover or touch each other. Cover them over with a third piece of cloth, similar to the others, moistened in the same manner. Then place the saucer in a moderately warm place. Sufficient water must be turned on from time to time to keep the three thicknesses of cloth moist, but great care must be taken not to use too much water, as this would destroy the seed. There should be only enough to moisten the cloth, and not enough to allow any to stand in the saucer. Danger from this source may be avoided, in a great measure, however, by tipping up the saucer, so as to permit any superfluous water in it to drain off. The cloth used for covering may be gently raised each day to watch the progress of the swelling or molding of the seeds. The good seed will be found to swell gradually, while the old or poor seed, which has lost its germinating power, will become moldy in a very few days."

In this way, also, any one can judge whether old seed is mixed with new. The latter will germinate much more quickly than the former. He can, moreover, judge of the quantity which he must sow, since he can tell whether a half, or three-fourths, or the whole, will be likely to germinate, and can regulate his sowing accordingly. The seeds of the clovers, if they are new and fresh, will show their germs on the third or fourth day; other seeds will take a little longer; but till they become coated with a mold there is hope of their germinating. As soon as the mold appears it is decisive, and the seed that molds is worthless.

It is always best to buy grass seeds by weight, rather than by measure. Knowing the weight of the different grass seeds, the buyer can determine whether he has been imposed on by the seedsman better than if he bought by measure. The following is a list of the weight of the seeds of forage plants and grasses suitable to the South:

Herd's grass, weight of a bushel of seed,	14 lbs.
Timothy.....	44 "
Meadow-oat grass.....	7 "
Orchard grass.....	12 "
Italian rye-grass.....	15 "
Blue-grass.....	13 "
Red clover.....	64 "
White clover.....	65 "
Crimson clover.....	60 "
Lucerne.....	60 "

If the reader will trust to the experience of the writer, he will find it hardly worth his while to go beyond the list of grasses described

in this Essay. Full trial has been made of more than twenty other species of grass cultivated in Europe and at the North, without success.

AFTER-TREATMENT OF GRASS LAND.

Fatal errors are often committed in the management of lands in grass. As soon as the young grass is green in the spring, live stock is turned upon it; whereas grass should not be grazed until it has once gone to seed, and in subsequent years only after it is nearly in blossom. Too much stock should at no time be put upon it as to graze it close to the ground, Bermuda and blue-grass being exceptions.

Blackberry bushes, china briars, sassafras and persimmon sprouts and other bushes should be repeatedly cut with a strong short bush-scythe. These cuttings will kill them in one season. This cutting should be made below any bud or leaf. If this precaution be neglected the cutting might as well be omitted, for it will be useless.

In pasture land, if the briars and sassafras are cut early in the spring, a flock of sheep will destroy them by eating the tender shoots as they appear. Persimmon, oak and hickory bushes must be cut with a blade.

Much may be done toward cleansing a foul pasture of permanent weeds, when they just appear in small numbers, by dropping the salt used in salting sheep, cattle or hogs upon them. In their eagerness for the salt, the stock will destroy them.

The only remedies for broom-sedge are either to top-dress the land with ammoniacal manures or ashes, or to plow up the ground and put it in corn or cotton, and then resow the grass seeds. Top-dressing the land would be good economy in a meadow, but would not be justified in a pasture, unless it were a winter pasture. The latter will justify a heavy outlay in manures, perhaps better than any other part of the farm.

MANURES FOR GRASS LAND.

The best manure is farm-yard manure. Where the supply of this is limited its value may be increased by composting it with rich earth from ditches, woods-mold and ashes; or the quantity of manure may be increased by composting commercial or chemical manures with the same materials. It should be remembered that ammonia and potash are the dominant wants of the grasses, and phosphate of lime of the clovers and lucerne.

This compost applied in the winter is valuable not only on account of the manure, but

especially for the mulch that is given to the young grass, protecting it from the severity of the winter and the intense heat of summer. Indeed, if the land be sufficiently rich to cause a full stand of grass, this subsequent top-dressing is really more valuable than if the manure had been incorporated with the soil at the time of sowing. This top-dressing should be applied only in dry weather.

If no stock is allowed to graze a meadow after it has been cut until toward Christmas, and if the meadow consist of grasses which bear a full aftermath, as is the case with orchard, meadow-oat and blue-grass, and if the stock grazing it are not removed at night, such a meadow will continue to improve. This is not the case with a timothy and Herd's grass meadow, as they leave very little second growth or aftermath. They should receive a top-dressing at least every three years. If the farm does not produce the manure, the farmer should buy it. An acre of land that will yield two tons of hay worth \$60, well deserves a triennial application of \$10 worth of purchased fertilizer. It will pay better than the same application to cotton land, taking into the account the cost of culture.

The cheapest manure for grass land is water by means of irrigation. But the limits of this little Manual will not allow a detailed account of this cheap and important process. The reader who is interested in it is respectfully referred to a Prize Essay on that subject by the writer, which was published in the *Plantation*, Atlanta, last year, 1871.

WHETHER TO SELL HAY OR TO FEED IT.

This depends upon our locality and the price we can get for our hay. If hay sells for \$30 or \$35 per ton, a farmer who lives near a market would be very foolish to feed that hay to cattle, provided he will invest a portion of the proceeds of the hay in chemical or commercial fertilizers. In our mild winters a cow will eat 500 pounds of hay, and much more if it be given to her. But after the run of the fields 500 pounds of hay will sustain her until grass springs. This 500 pounds of hay would sell for six or seven dollars. If we deduct trouble of housing and hauling, the manure of this cow is not worth the six or seven dollars. If she be fed on winter pastures, that is another affair. The question now is between the value of a given amount of hay, merchantable at a given price, and the value of a winter's manure of a cow. Six or seven dollars' worth of a

suitable fertilizer will go further in improving a meadow than the manure of one cow, unless extraordinary expense is incurred and care bestowed in providing litter, muck and tanks for liquid manure. But in determining this question of comparative profit, it must be quite certain that the man who sells the hay buys the six or seven dollars' worth of fertilizer. If he does not, it will be better for him to feed his hay, no matter what price it will bring in market, for his meadow must have manure.

It is very clear that if we take more from land than we give to it, we are ripping up the goose. A very small leak will empty a barrel in time, unless we continue to pour into it. A crop of hay takes so much of a variety of salts from the ground. If we do not return an equivalent our crops will annually diminish. If we wish them to increase, we must return more than an equivalent. This is only common sense.

This comparison is made only as to the value of the manure of the domestic animals when fed with hay. There may be a special value in beef or butter, or in mule or horse colts which would modify it. It is important not to be misunderstood. When hay is at a high price and the market is near, it is cheaper to spend some of the hay money for manure than to trust to the cow fed on hay simply as a manure-making animal.

It is not designed to decrease the number of horses, cattle or sheep, but to point to the fact that hay at present prices is too expensive a food to feed them with when they can be fed much more cheaply, and that is by means of winter pastures, which cost nothing after the first outlay, and continually improve by judicious grazing.

The present prices of hay, \$30 to \$35, will probably continue for a long time in the plantation States. Under our former system the planter could pull an excess of fodder and sell it at a small profit at \$1 per hundred pounds. Now if he sold fodder pulled by our present hired labor at \$30 per ton, it would be a losing business.

There are a vast number of horses and cows in our cities and elsewhere belonging to non-producers, which consume bought forage. This number is yearly increasing with the increase of our non-producing population. The supply of forage for this live stock has heretofore been brought by rail from the West. On account of the cost of freights, the Western farmer cannot lay down hay in our cities at less than present

prices. There is therefore no reasonable expectation that the price of hay will materially diminish. At the present prices, to one living near a railroad or a market, the profits are enormous.

Let us take a case. Lucerne will grow anywhere in the South where the land is not too sandy, is dry, and is made very rich. Five tons of lucerne hay to the acre is not an unreasonable estimate, but we will say four tons. This at \$30 per ton, is \$120 per acre.

Now suppose a man buys 100 acres of land—it may be old broom-sedge with a good clay foundation, near a good hay market—at \$10 per acre, \$1000. Suppose that it costs him \$40 per acre to plow, harrow, roll, seed and manure this land. His investment will have been \$5000. At four tons per acre, worth \$30 per ton, his crop will bring him \$12,000; that is to say, \$12,000 grass is obtained from an investment of \$5000. There is nothing speculative or theoretic in these figures. Every one who knows anything about it knows that four tons to the acre is a small yield for lucerne. If there be an error it is in the under-estimate. Any one who reads the prices-current of our newspapers also knows that the price quoted above is correct. It should be borne in mind that the \$5000 investment is only for the first year. After that the \$12,000 will be obtained with only the cost of a triennial top-dressing and the cutting and saving the crop, which with improved implements is less than \$3 per ton. What cotton or rice planter approximates these results?

But it is said, perhaps, with a sneer, "We are poor? None of us have \$5000 to invest in one hundred acres of grass." Yes, you have, if you are a cotton planter to any extent. Sell a dozen of your mules, that have been annually eating their heads off since the war—the Southern mule being like a cat with nine lives. Sell the corn and fodder that would feed them for a year, or save the money that would buy it. Estimate the annual cost of the twelve hands which would be necessary to work the twelve mules, and if you have the land already, you will have saved money enough for the 100 acres of lucerne.

One hundred acres has been selected as a definite figure. Of course the amount of land can be diminished or increased according to the ability of the party concerned.

In this calculation lucerne has been selected, as four tons per acre is an under-estimate. Both clover and timothy have yielded that amount under high culture.

[TO BE CONTINUED.]

Plow Deep.

Now that we have no scorching suns to bake the soil, and that we have the valuable aid of the winter frosts to disintegrate and pulverize it, we should keep every plow going, and see that it is driven as deep into the earth as the team can pull it. By deep plowing we do not mean necessarily *turning up* the soil from a great depth and turning under the surface. Except where there is a quantity of vegetable matter or stubble to be turned under and covered, we do not advocate the use of the large turning plow. We recommend deep breaking without much turning of the surface. It is the subsoil we want to render loose and porous. It is this that must be broken if we would raise good crops. The large turn-plows that are used at the North, where the winters are long and the frosts sufficiently severe to pulverize the soil to a depth of several inches, are not adapted to our climate, except as before remarked, where it is desired to cover up a heavy stubble or coating of vegetable matter. The ordinary turn-plow (Brinly's is the best we know), followed by the subsoiler, does the best possible work in our opinion. The great defect in our system of plowing is that it is delayed too long, until there is no time to break the ground properly before planting time comes. Fall and winter plowing provides the only remedy, and this is effectual.

For the Southern Farm and Home.

Draining.

MR. EDITOR—There are hundreds of thousands of acres in the Southern States of lands as level as a billiard table, which are as unproductive as the baldest red hill, and the reason is that they are cold and sour from stagnant water which excludes the air, compacts the soil, making it as close and tenacious as mortar, changing the temperature, and making their cultivation difficult if not impossible. What is needed to restore their fertility is under-draining by which this stagnant water will be carried off. I regard this as one of the chief means of renovating land, and in cases such as I have described, the only effectual means. But if draining be undertaken at all, the work must be well done, otherwise it is time, labor, and money wasted. There are various modes of draining. The first and worst is the open ditch which costs a great deal, is unsightly, involves a considerable loss of land, is troublesome to cross, and requires vast labor and at-

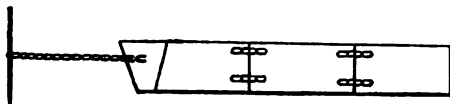
tention to keep open and clean. The open ditch is better than nothing, and that is all that can be said for it. The next best mode is the covered or blind ditch, in which stones, or tiles or poles are laid and then covered with soil. The best of these are those where tiles are employed, after these the stone drains, and last and worst are those filled with poles and brush.

In my opinion, the very best, cheapest and most effectual mode of draining is that which is called plug-draining, and which is used with great success in the stiffest clay lands in England and Scotland. The best and most intelligible description of the plug-drain is to be found in that admirable work—"Coleman's European Agriculture." It is as follows:

"After the drain has been fully opened, some wooden blocks chained closely together, of the shape and size of which it is desired that the drain should be, are placed at the bottom of the drain. The clay is then filled in carefully over them and hard rammed, and then the other dirt returned upon the top of that. The plugs are then drawn forward by means of a stake in front of them, to which they are attached, and the filling in continues until the whole is completed.

The size of the plugs may vary according to the size which it is desired the drain should be, but I will give the size which is sometimes recommended. The blocks may be eight inches in height, six inches in length, four inches wide at the top, and two inches wide at the bottom, and fastened together by strong links of iron. To the forward block, an iron chain is attached, by which the whole is drawn forward by means of the stake or lever in front."

The annexed woodcut gives an accurate idea of how the plugs are made and used.



Coleman says that on one farm in England, three hundred miles of this kind of drain have been made within three or four years, and with the best results.

In all draining, the first thing to find is the level of the land. In the lowest part of it, cut the main drain, and into this the lateral drains cut at right angles to it will empty themselves. A fall of one foot or eighteen inches in a hundred yards is enough to carry off the water. If the land is very stiff, the lateral drains should

not be further than twenty feet apart, but in loose soil they may be thirty, forty and even fifty feet apart. The depth should not be less than three feet, and they need not be wider than four or five inches at the bottom and a foot at the top. The work is not nearly so expensive, nor is it as tedious as is supposed. It is amazing the effect it produces in increasing the fertility of the soil, in facilitating cultivation, and in preparing the land for early planting.

TIPTREE.

Letter from John Plowhandles.

A PLACE FOR EVERYTHING, AND EVERYTHING IN ITS PLACE.

MR. EDITOR—The "caption," as I believe it is called, at the top of this page, may have a Poor Richard, Yankee smack about it, but I tell you that it contains sound sense, and if we Southerners would mind it we should be much better off than we are. Our farmers are a most untidy class of people. We take little or no care of anything on our farms. If we would only put away our implements of husbandry—plows, hoes, spades, wagons, &c.—when we have done using them, and protect them against the weather, the saving of expenditure would be enormous. Now when plowing time comes, what is the scene presented on nine out of ten farms? The plow-gear has to be gathered after a diligent search for collar, hames, back-band and trace-chains. The plow-lines are almost always gone—either cut up for halters or to mend a broken wagon. The plows are generally found in a fence-corner or at the end of a furrow where they were left when last used, with all the irons loose and rusty, the wood-work split and cracked, the whiffletrees broken or lost, and the clevis generally lost. Instead of going to work at once, precious time is lost hunting the wherewithal to work, and when the sheds, fence-corners, lofts, &c., have contributed their quota toward gear and plow, it generally happens that the calves have gnawed the collar so that it cannot be used, that the hames are broken, that the thong that fastens them is lost, that the back-band is rotten, that the lines are gone, that the trace-chains are not to be found, and that the plows must be sent "to the shop." All this costs not only time but money, whereas if these articles were put away in a proper place when they were no longer used, there would be nothing to do but to take them out, hitch up and go to work. Pay a visit to the shed corner or the room that is called the tool-house, where

even the name of such a place exists, and what do you see? Generally a few worn and rusty plow-points, some broken whiffletrees, pieces of old harness, a dismantled grinding-stone, scraps of old leather, a pile of rotting sacks, some hoopless barrels, and an abundance of rats and bugs of all descriptions. Where do you see a clean, tidy room, with the harness hung in sets on a rack, with the plows cleaned, oiled and carefully stowed away, with the hoes, spades, shovels, &c., cleansed from all dirt, neatly stacked in a corner, and the cradles and mowing blades conveniently suspended from the ceiling?

When do you see a washed wagon on a Southern farm? How often do you see one that is put under shelter from the blistering sun, the soaking rain, the wind or the frost?

Why is this? Because we do not take the trouble to attend to such small matters. We leave them to the negroes, and of course they do not attend to them. The result is, we are poor. If we would be rich we must be more tidy and economical, pay more personal attention to the details of our business, and see to it that on our farms there is "a place for every thing, and everything in its place."

Yours respectfully,

JOHN PLOWHANDLES.

For the Southern Farm and Home.

The Value of Oxen on Farms.

MR. EDITOR—The epizooty has done one good thing, at least. It has demonstrated the value of good, well-broken steers as work animals, and with what advantage they can be substituted for mules and horses. For heavy plowing and hauling, they will beat any mules. They may not be as *peert*, or get over as much ground in a day as a pair of likely mules or horses, but take a number of days of continuous heavy work, pulling a big subsoiler or hauling large loads, and we will back the oxen at long odds. They are certainly more economical than mules. First-class steers can be bought for \$100 a yoke. A pair of first-class mules will cost \$325 to \$400. The steers can be kept in good condition on half the cost for food that is required for the mules, and it takes no longer to break a young steer than it does to break a young mule.

I think that in all the work of preparation of land—clearing, fencing, plowing, &c.—oxen could be substituted for mules and horses with great advantage, leaving the latter to do the

lighter work of cultivation. I have seen, during the last six weeks, yokes of oxen pulling big loads of cotton through the streets of Memphis which no pair of mules could pull, and doing it as briskly as any mules I ever saw. Then the oxen have another advantage, which should not be overlooked, namely, when they cease to be serviceable for plowing or hauling they can be stall-fed and fattened, and will repay their price in good beef. Bos.

MEMPHIS, TENN., December, 1872.

For the Southern Farm and Home.

Culture of the Irish Potato.

MR. EDITOR—Why is it that a far larger portion of the Irish potatoes eaten or used for seed by us is raised at the North and imported here, than that which we produce ourselves? It is true, strange as it may appear, and I think that the reason of it is that we do not raise as good potatoes as our Northern neighbors. Now, if you ask me why this is—the Irish potato (*Solanum Tuberosum*) being of Southern origin—I will answer that in my opinion it is because we try to raise the potato in our warm climate in the same way that the Northern people raise it in their cooler and moister climate. We can raise just as good *early* potatoes as any at the North, but when they should be fully matured and be most dry and mealy, they are inclined to become sobby and watery, when cultivated after the Northern fashion. I think I have discovered the secret of planting Irish potatoes in our latitude. I plant always under straw, using plenty of it, and the deeper I cover the seed the more abundant the yield. I plant at any time from now until March. I break the potato land as deep as I can, manure it well, not too heavily, with well-rotted stable manure or cotton seed, open furrows four or five inches deep, two feet apart, fill the furrows nearly full of cotton seed, and then plant the sets on the manure, cut side down, about ten inches or a foot apart. I cut my seed a week or ten days before planting. When the sets are planted the furrows should be covered with earth, forming a ridge over the seed, and then I cover the whole with straw of any kind—pine straw is as good as any—and as deeply as I can afford. The advantage of this mode of culture is that the straw is beaten down by the rain, moisture is kept up near the soil, the temperature is even, the potato is kept cool, and it thus acquires that dry, mealy quality which is so desirable. No matter how deeply you may strew the straw

be sure that the tops will make their way through it in search of light, and the potatoes will form and mature as high as the moisture reaches.

Another great advantage of this mode of culture is that there is no need for any further labor—no plowing, hoeing or cultivating. All that is to be done after planting is gathering the crop, which I have always found to be more abundant and of better quality in this way than in any other.

December, 1872. WALTER RALEIGH.

For the Southern Farm and Home.

Raising Our Own Bread and Meat.

MR. EDITOR—You preach well about the importance of our raising our own bread and meat, and that we can do so if we will, and raise all the cotton we can gather besides. But I do not believe that many people mind your sermons. I judge from the hogsheds of western meat, the sacks of western corn, and the bales of northern hay which crowd all our depots and steamboat landings, and which have to be paid for out of the proceeds of our sales of cotton. You must be wrong in all you say. We cannot profitably raise our pork, corn, wheat, oats, peas, potatoes and hay, and raise our cotton also, or else we would do so and quit buying meat and corn from Illinois and Ohio and Indiana, and hay from Yankeeland. We are men of enterprise and skill, and if it paid to produce our own supplies, of course we would do it. Money is tight, to be sure. Planters have not a cent in their pockets yet, though they have sold a large part of their cotton crop. They have not done paying for the corn and meat and hay which they had to buy to make the crop; but they know what they are about, I suppose. It is not good to be too rich. I confess I differ from them. I like raising my own supplies and owning all my cotton, and when a refined and intelligent lady, who chiefly manages her husband's plantation on the Arkansas river, told me the other day that she had more corn, fodder, peas and oats than she could use; that she raised all the meat consumed on her place; that she never bought butter, lard, or anything that is used on the farm except clothing, implements and groceries, I felt an admiration for her, and believed she knew vastly more "about farming" than those who buy everything—running in debt for it, too—and raise nothing but cotton, which, when made, they must break their

necks to sell in order to satisfy the demands of their merchants.

I mention the subject and present the contrast of the two systems at this time that my brother farmers, who are now laying their plans for the coming year, may judge between them.

O. FOGY.

ARKANSAS RIVER, Dec. 4, 1872.

For the Southern Farm and Home.

Our Outlay for Mules and Horses.

MR. EDITOR—I have been a subscriber to your paper ever since the first number appeared in 1869. I can truly call myself "a constant reader." I am indebted to you for much valuable advice and information, and I have never seen a single number that did not contain something which paid me several times more than the yearly subscription. But of all things I must approve your persistent efforts to induce us to raise our own supplies of everything. I deeply regret to see how difficult it is to make people see their own good. We deplore loudly the drain of money from the country to pay for the meat we buy, but I believe that the drain of money to pay for the mules and horses that we buy is much greater in amount. It seems to me that there is no more necessity for one than for the other. I am satisfied we can raise our own mules and horses just as well as we can raise our hogs. It is less "bothersome" perhaps to buy from a drover, and give a check on your merchant, but it costs like the mischief. We certainly have plenty of open land, and can raise small grain for pasture and for forage with very little trouble. There is hardly one of us who, if he will, cannot raise two, three or half a dozen mule or horse colts every year, which, at three years old, will be worth one hundred and fifty dollars apiece, and cost next to nothing for raising. Select stout, well-shaped mares, and after the summer's work is over and they have recruited, put them to the horse or jack, say in September. Thus the colts will be dropped in September, and if good succulent winter and spring pasturage is provided, the colts will be quite strong enough to wean before the spring work commences, thus losing none of the farm service of the mares. With plenty of oats and rye pasture in winter, and early spring and clover and pea-fields for summer and fall, with good shelter in inclement weather, in three years good healthy colts can be raised, and no checks need be drawn on the

merchants. It is not near as "bothersome" as many suppose, but even if it were, in my humble judgment, Southern planters as a class are in that fix, that if a good deal of bother will pay and save them from running in debt and sending their money out of the country, they ought to submit to being "bothered." I know that it bothers me much less to raise a fine mule or horse, than to have to buy one from a drover and give my note at 2½ per cent. a month interest for advances to pay for it.

SELF-HELP.

WILKINSON Co., Miss., Dec. 6, 1872.

For the Southern Farm and Home.

Red Clover.

During the month of February in this latitude, every good farmer should, if possible, get in a wide breadth of oats, and with the oats he should seed red clover. I am perfectly aware that four readers out of five will sneer at the idea, and that but one in a hundred will follow the advice; however, I'll bait my hook and angle for that one.

A couple of years since I sowed oats on a twenty acre field in February, and seeded it with a gallon of clover seed to the acre. The oats came forward and gave me a famous crop, and I saved them in excellent order. But when the oats were removed I had exposed to the vertical summer sun a few sickly, spindling stalks of clover here and there, which gave but little promise for the future. A couple of neighbors came over and held an inquest, which resulted in their condemning the effort as an unwise expenditure of good money. Said one, "That stuff will surely die out; never will stand through August." The other declared clover an impossibility. "This country," said he, "is only good for cotton and corn." I was not disposed to yield without argument, and, therefore, as did Prince Hal in the play, demanded a reason. Did they know from personal experience (they were both good farmers of their kind—which "kind," by the way, are worth just seventy-five cents a dozen), anything of the matter; had they ever experimented with clover; or was it mere stupid, stolid prejudice which blinded them? No, they knew nothing of the business whatever; never saw a clover seed or owned a plant of it; but that was nothing, "it wouldn't do." The condemnation of my neighbors did not seem to affect the clover, however. We had some fine showers in the early part of August

(we generally do), and it began to show more stamina and the plants seemed to increase in number. So it went until the weather began to get cool in the latter part of September, and in October it was a clover field. And, to make short work of a long story, we cut *such* a crop of hay from it this spring. I thought we never should get through with the interminable job of housing that hay. It was perfectly glorious to look at the sea of red blooms first, and then the countless cocks of hay afterward. We transformed a big gin-house into a barn and packed it full to the roof, and to the very comb of the roof. I won't say how many tons we made to the acre—that is immaterial. I do know, however, that we have the big barn full, which we value at a good \$1000, and that we got it without ever plowing a furrow; and what is more we know that we will get another big crop next year, and that also without plowing. And then we know another very important thing, that this land, after having given us three splendid crops (oats and clover) from one plowing only, will then give us more cotton than if manured with Dickson's compound, reinforced by Pendleton's best, *ad lib.*, and thereafter will bring corn. You may depend that I did not forget to invite my skeptical neighbors to look at the splendid outcome of the sickly-looking plants of the previous season. I repeated their prognostications, and desired them then and there to recant their false and heretical doctrines concerning this important plant. Whereupon, to my great amusement, both acknowledged that they had continued to watch the experiment after the "inquest," and had each become convinced of his error long before seeding time in February, and both had now seeded a good breadth!

This was sufficient for one occasion. Let us mark the moral before we proceed. Sow clover on your oat land after the oats have been plowed in (sow the seeds *on* the surface and leave them to get under it in their own way and in their own good time), and don't hearken to any number of neighbors as to what will happen. The main thing is to *sow*. Be sure and sow, for on this commandment hang *all* the law and the "profits"—yea, the *profits*—for I hold that it is madness and folly to expend labor on poor land.

It is possible I may be told that red clover will not succeed on poor land. I grant it, but on the other hand urge that the land which will not "catch" red clover should not be cultivated. You are guilty every year of using

commercial fertilizers on cotton. Bad farming. Put your nostrums on an oat and clover crop and bide your time.

I do not say that red clover will grow on all lands, but wherever it will grow it is as necessary to good husbandry as is good plowing or any other thing about the farm.

GEORGE W. GIFT.

MEMPHIS, TENN., Dec. 6, 1872.

For the Southern Farm and Home.

The Cow-Pea as a Fertilizer for Cotton Land.

MR. EDITOR—I lay no claim to a knowledge of chemistry. I am not a scientific man. I am only a plain, practical farmer, who read the best agricultural papers and learn what I can from them to supply the defects of my education. I have read that an analysis of the cotton plant shows that the lint is composed as follows: Carbonate of potash, 44½ parts; phosphate of lime, 25½ parts; carbonate of lime, 9 parts; carbonate of magnesia, 6½ parts; and silica, 4 parts. The seed gives: phosphate of lime, 61½ parts; phosphate of potassa, 31½; sulphate of potassa, 2½ parts; and silica, 1½. Now, if this analysis be correct, and I suppose it is, it is evident that phosphoric and carbonic gas are the chief gases, and potash and lime the principal bases which compose the cotton plant, and that the fertilizer which contains these in the greatest degree must be the best suited to the cotton crop. The common cow-pea, in my opinion, fills the bill exactly. It is easily raised, will grow on any soil, and costs very little. An analysis has shown that 100 parts of the ash of the cow-pea contains 34½ parts of phosphoric acid; 40½ parts of potash; 6½ parts of lime; 5½ parts of sulphuric acid; and 6½ parts of magnesia. The pea vine gives 38 parts of lime; 17½ parts of potash; 14½ parts of carbonic acid; 4½ parts of phosphoric acid; silica, 5½ parts; 5½ parts sulphuric acid; magnesia, 6½ parts. I cannot vouch for the perfect accuracy of these figures, but they are sufficiently correct for all practical purposes, and demonstrate conclusively to my mind that to renovate our worn lands and make them fertile for the production of our great staple, we have no better agent than the common cow-pea.

The next thing is how to use the pea to attain the desired result. Some say turn the vines under when they mature and before they begin to wither. Others recommend that they

be allowed to decay upon the ground. The objection to the first-mentioned way is that the soil is exposed to the hot sun, and is thus robbed of much of its fertility; and the objection to the latter plan is that by leaving the leaves and stalks of the vines to rot during the winter, much of their fertilizing properties is lost. Good farmers advocate both plans. I am in favor of liming the vines when they are matured, and turning them under in a green state. If sown about the first or middle of June they are ready to plow in about the middle of September, and after that time the sun is not powerful enough to do much damage, at least not enough to make it worth while to avoid it by the loss which follows leaving the vines to rot by exposure to the rain and frosts of winter.

WHIP-POOR-WILL.

HANCOCK CO., GA., December 4, 1872.

For the Southern Farm and Home.

Pork Raising.

MR. EDITOR—I am one of those who "go in strong" for raising our own meat, and not buying one pound from the North or West. I used to kill before the war from one hundred and twenty-five to one hundred and fifty hogs every winter, making an average of thirty to forty thousand pounds of pork, and none of the hogs were more than two years old, while most of them were eighteen months. They did not cost me much, either. I always crossed on the best stock I could find, re-crossing every second year. I separated my fattening hogs from the stock hogs at the end of January, sowed plenty of oats for pasture, planted a succession of roasting-ear patches to cut and feed to them, stalk and all; had fine patches of red clover and a free supply of fresh water, with occasional doses of ashes, copperas, salt and sulphur. I always have plenty for my plantation use, and right smart to sell.

I do not raise as many hogs now as in *ante bellum* days, but I follow the same plan, though on a smaller scale. I raise the Berkshire (nearly pure-bred by careful crossing). I keep up my oats, clover and roasting-ear patches for the exclusive use of my hogs, and at eighteen months old I have ready for the knife hogs which weigh from two hundred and twenty-five pounds all the way up to two hundred and seventy-five pounds. I have no need of Western bacon.

I find that a little tar given occasionally with the corn and mixed with the water in the

troughs, is very healthy. I was advised to do this by a North Carolina friend many years ago, and I have since lost but few hogs from cholera. I know from many years' experience that we can raise all our own meat and make money at it, and I am trying with all my might to raise and make on my own place everything else that I need, not merely as a measure of economy, but as a way to independence.

M. D.

BULLOCK CO., ALA.

For the Southern Farm and Home.

Hydraulic Rams.

MR. EDITOR—An abundant and never-failing supply of water is one of the greatest blessings that the farmer or horticulturist can possess. It is within easy reach of almost all, and yet how few possess it. A rudely constructed cistern or well is generally the only source of water supply, and even this is not universal. How many draw all the water they need by hand power from the nearest spring or branch!

By the use of a hydraulic ram, every one who has a spring or branch on his place can secure a never-failing supply of water for his house, his stock-yard and his garden. All that has to be done is to sink a wooden curb in the main spring with a pipe leading from it until it attains a fall of five or six feet. Of course the greater the fall the greater the elevating power of the ram. In order to attain this fall, the pipe leading from the curb to the ram should be sunk in the ground at an incline, so that the end next the ram will be say three feet lower than the end next the curb, and if the box containing the ram is sunk three feet, the required fall of six feet is attained, which is sufficient to force the water up a perpendicular height of eighty or a hundred feet into a reservoir. The reservoir may be built of any desired size of common plank lined with zinc. It should be built on brick pillars. The cost varies according to the distance the water is to be carried and the length of pipe required.

I know a place where one of these hydraulic rams is used, sunk as I have described, which forces the water to a height of upward of eighty feet, supplying the house, bath-room, stock yard, gardens, green-houses, and a beautiful fountain in the flower garden, the cost of which, including the ram, reservoir, a thousand feet of lead pipe and the construction, was only two hundred dollars. The owner would

not take ten thousand dollars for the comfort he derives from the machine. The ram by itself does not cost more than thirty-five or forty dollars, say fifty dollars laid down.

There is hardly any plantation where a fall of water of from five to twenty feet cannot be easily obtained, and thus at a very small outlay the dwelling-house may be always supplied with an abundance of fresh water, the luxury and healthy enjoyment of the bath may be always enjoyed, the vegetable garden and flower yard need never suffer from drought, and the stock and fowl yard may enjoy fresh water without stint. Once laid down there is no further expense, as the ram is so simple it never gets out of order.

J. E. H.

HENRY CO., ALA., Dec., 1872.

For the Southern Farm and Home.

Breaking Steers.

MR. EDITOR—The epizooty has proved how useful steers may be made; but to make steers really valuable they must be well broken, docile, tractable and willing workers. This requires patience, and few farmers exercise it sufficiently. To break steers well they should be handled early—before they are two years old. Always treat them gently, both by word and deed. When the yoke is first put on them speak to them kindly, give them some food, and show them that you do not mean to do them any harm. As soon as they are yoked feed them again, and take off and put on the yoke two or three times a day for several days until they become accustomed to it. Then they may be taken out and driven a little. If they show sulk or fright do not treat them roughly, shout at them, or try to force them to do what you want. The great secret in training all beasts of burden is to keep your temper and exercise patience. There is rarely to be found an animal so obstinate or vicious that kindness and perseverance will not conquer. After driving for two or three days in the yoke they may be hitched to a light sled, increasing gradually the weight of the load to be hauled, until after a few days' practice they will readily move off with any load they should be required to pull. Gentle handling, feeding for encouragement, kind language, patience in teaching—not wanting to teach the whole lesson of hauling at once—will accomplish the work better, and, so far as the result is concerned, more quickly than where beating, shouting and cursing are employed.

I saw a man on Main street a few days ago who was very anxious to sell a steer to another to haul a dump-cart. The steer was evidently unbroken. When harnessed and hitched—he submitted to both with remarkable docility—he was required to pull, but this was asking too much. With a couple of plunges he soon freed himself from harness and cart and seemed very indignant. The owner, fearing he might lose the sale, set to work to subdue him, and with yells and curses and brutal use of a club over the nose and flanks and legs, such as made me wish we had a Mr. Bergh among us, he tried for an hour to bring the steer to reason. He failed utterly, and I was glad of it. The steer would not allow any one to approach him with the collar or any part of the harness. The more he was beaten the more frantic he became. The brutal owner lost the sale, and so bruised and gashed the wretched animal that I do not believe he will ever be fit for anything.

B.

MEMPHIS, December 9, 1872.

*For the Southern Farm and Home.***Experience Teacheth.**

MR. EDITOR—I am an old man, upward of three-score years, during two-score of which I have been a tiller of the soil. I cannot say that I am rich now, but I have been rich, and have now all I need, do not owe a dollar, have given my children a good education, and when I am called away will leave them enough to keep the wolf from the door. My experience has taught me that:

1. One acre of land well prepared and manured and well cultivated, will produce more than two acres which receive only the same amount of manure and labor expended on the one.

2. One cow, horse, mule, sheep, or hog, well fed, is more profitable than two kept on the amount of food necessary to keep one well.

3. One acre of clover or grass is worth more than two acres of cotton where no grass or clover is raised.

4. No farmer who buys oats, corn, wheat, potatoes, peas, fodder and hay, as a rule for ten years, can keep the sheriff from his door in the end.

5. The farmer who never reads an agricultural paper, and sneers at book-farming and improvements, always has leaky roofs, poor stock, broken-down fences, and complains of "bad seasons."

6. The farmer who is above his business and intrusts it to another to manage, soon has no business to attend to.

7. The farmer whose habitual beverage is cold water, is healthier, wealthier and wiser than he who "does not refuse a drink."

If you think this advice worth a corner, I may give you some more dots from my experience.

SENEX.

*For the Southern Farm and Home.***Devon Cattle.**

MR. EDITOR—I see that you recommend the Ayrshires as the best breed of improved cattle for the Southern farmers to raise, and while I am ready to admit that the Ayrshires are a good breed, I cannot accept your praise of them to the exclusion of all others. I think the Devons fully equal if not superior to them. As workers, no animal of their size and weight can come near them. They have more muscle, more fineness of limb, more docility, quickness and endurance than any other known breed of cattle. They move with almost equal speed, especially over rough and hilly ground, with good mules or horses, and they can pull a much heavier load.

For the dairy they may not yield as large a quantity of milk as the Ayrshires, but their milk is of superior quality, and will produce more butter to the gallon. Their docility is universally admitted.

For meat they are unsurpassed in the quality of beef. They do not grow to as large a size as the Short Horns, but with care they will grow to an average weight of 1000 or 1200 pounds.

DEVON.

SYKESVILLE, MD., Dec. 3, 1872.

*For the Southern Farm and Home.***Raising Onions from Seed.**

MR. EDITOR—First-rate onions may be raised from seed anywhere in our country, if the seed are planted now as soon as possible in a rich, mellow soil—a sandy loam is the best. Be sure that the soil is fine and well-broken. Buy the best seed. Import it from Massachusetts. Soak it for twenty-four hours before sowing. Sow in drills eighteen inches apart, dropping the seed from four to six inches from each other, and cover not more than half an inch, pressing the soil firmly with a roller above the seed. When the plants come up and are large enough, thin to about a foot apart. Keep the soil loose and mellow, and when the stalks become as large as a penholder, be very careful to culti-

vate shallow, as the roots have occupied all the space between the rows, and if they are wounded or cut the consequence is destruction of the young plants. By midsummer, if the bed is dressed once with land-plaster, onions of very respectable size will be made, which to my taste are much more palatable than those that are imported, or the large bulbs raised from buttons. At all events, even if we like "big *inyuns*" we can raise the sets in this way to grow them instead of sending to Wethersfield, Mass., every year for them. It may be less troublesome to buy the sets at the drugstore, but it is more expensive and not as satisfactory as home production.

The best manure for onions if the soil is not naturally rich enough, is a mixture of ashes, bonodust, plaster and salt. Peruvian guano and dissolved bones mixed with plaster or charcoal dust, make an excellent fertilizer for them.

CEPA.

CHESTERFIELD CO., VA., Dec., 1872.

*For the Southern Farm and Home.***Stand by the State.**

MR. EDITOR—Most cordially do I approve your advice to Southern men to stick to their country, and give up all idea of moving away in the vain hope to find a better. I am a States' rights man all over. I believe the State has a right to the service of all her sons, and when she is in trouble or adversity they should adhere to her all the more fondly. It is our duty to stand by our States, even if we could find any better place to go to, but I contend that in no country on the earth's surface can any man do better than in our own loved Dixie.

Looking over an old scrap-book the other day, I found the following "Remedy for the Emigrating Fever" which I cut out of a paper several years ago. I do not remember the name of the paper. I cut it out because I thought the advice was good at the time. How much better it is now. I copy it for you that you may publish it if you will. Perhaps it may cure some of those who are thinking of moving away from the State of their birth in search of better and richer land, and make them stick to the old soil and try to renovate it.

Yours, DIXIE.

REMEDY FOR THE EMIGRATING FEVER.

Cathartic.—To be administered any season of the year in the form of under-draining. The dose to be greatly increased when there is much disposition to dropsy. To be followed

by deep plowing. If it should penetrate the subsoils, so much the better.

Emetic.—To be given in the spring in the form of hillside ditches and horizontal rows, and the dose to be increased when there is much disposition to get up.

Stimulant.—Plaster and ammoniated superphosphates, when administered by skillful physicians, but such as is to be found about horse-lots, ash-hoppers, cow-stables, hog-pens, sheep-sheds, gin-houses, creeks, swamps, woods, &c., have a happy effect and are much cheaper.

Anodyne.—A good, comfortable dwelling and all necessary out-houses, shade, ornamental and fruit trees; vines, flowers, shrubbery in great profusion and variety. If the above prescription is persisted in for four or five years and does not effect a cure, we shall consider it as hard a case as that of Hans' horse, that "broke the stable in two, kicked the traces open, and ran round the lamp post mit de corner grocery like the tyfel," and would recommend the afflicted to the clemency of all land speculators.

*For the Southern Farm and Home.***Smut in Wheat.**

MR. EDITOR—I see that writers in your valuable journal recommend steeping wheat in a solution of bluestone or in brine, as a preventive of smut. With all respect I differ from these worthy gentlemen. The way to prevent smut in my humble judgment is never to sow unripe and immature seed. I believe that smut comes from unripe seed, and that if the grain intended for seed were left to become dead-ripe, as it is called, we should never raise a crop of smut. At least such is my experience, and I have raised wheat for many years. I believe in changing the seed very often, and importing it from a considerable distance, as a protection against rust, but smut can be prevented, I know, by sowing none but thoroughly-ripe seed.

F. R.

RICHMOND, VA., Dec. 4, 1872.

*For the Southern Farm and Home.***Scours in Sheep.**

MR. EDITOR—I see you are recommending our people to raise sheep, and I hope you will succeed, because I feel that when every farmer has a few sheep, we shall have better farming, better land, better crops, and fuller pockets. I have known many novices discouraged at the outset by the appearance of common diseases among their sheep, which they did not know how to treat, and which proved fatal because neglected. Scours is one of the commonest of these diseases. It can be cured in nine cases out of ten, if when it first shows

itself a few teaspoonsful of common soot are administered once or twice a day. As this remedy can do no harm, and as your laboratory is the back of your chimney, it may not be amiss to try it. Simple remedies are often the best.

W. R.

BOTETOURT CO., VA., Nov. 28, 1872.

For the Southern Farm and Home.

Rotation of Crops.

MR. EDITOR—You would be astonished to know how few Southern agriculturists understand the benefits of a rotation of crops, and yet in the whole economy of nature there is no truer principle than is involved in it. The growth of one crop prepares the soil for the production of another by gathering plant-food suited to that particular crop. As for instance, the production of cotton, if the leaves, stalks and seed be returned to the land, a more than sufficient supply of potash is furnished to the succeeding crop of corn or wheat, while if successive crops of corn or wheat were raised for a series of years, the soluble potash of the soil would become exhausted, and the crops fall away almost to nothing.

The essentials to a maintenance of fertility in the soil are phosphoric acid, nitrogen and humus, and these can be supplied in adequate quantities by a judicious rotation of cotton and the cereal crops.

P.

NEAR NASHVILLE, Dec., 1872.

For the Southern Farm and Home

Fruit Culture at the South.

MR. EDITOR—The cause of most of the mistakes which Southern men make in their attempts to establish orchards is their servile imitation of the rules and directions laid down by Northern orchardists. Some years ago, because English and Belgian fruit-growers were noted for their skill and success in fruit-raising in their own country, the Northern men fell into the error of following them blindly, and it was only after long experience they found that what did well for the neighborhood of Devonshire or Ghent, would not do at all in New York or New Jersey. In the same way, what suits the Northern soil and climate will not answer at all with us.

Our people have not the time, money or patience to stand many failures. Already many friends of mine who desired to establish orchards have abandoned the attempt in disgust, and believe that ours is not a fruit coun-

try, whereas the truth is, their failure is entirely due to their having followed the advice laid down in Northern periodicals and publications concerning fruit culture.

If they would follow the directions of Van Buren or the two Berckmans of Georgia, Swasey of Louisiana, Langdon of Alabama, Peters of Tennessee, or other practical Southern nurserymen who have studied our soil, climate and productions, if they would read the many able agricultural periodicals now published at the South, they would make no more mistakes, and their success would surpass their most sanguine expectations.

I write in no anti-northern spirit, though I am an out-and-out Southerner, but to correct a positive error. It would not be more absurd for a gardener in Maine to work by the directions given by Langdon, at Mobile, or your able correspondent, Parker, at Bastrop, or Swasey, at Amite, than for us to follow the instructions of New England orchardists.

December, 1872.

EARLY HALE.

Cotton Manufacture in the South.

A correspondent writes to the New York *Journal of Commerce* some highly interesting facts relative to cotton manufacturing in the South. Referring to the Langley Mills, near Aiken, South Carolina, the writer says:

"A manufacturer of cotton yarns from Manchester, England, after looking at our books, told me that we manufacture cheaper than they did by about the difference in value of our currency and gold—that is to say, four and three-fourths cents per pound. Among the advantages enjoyed by the South over the North in manufacturing cotton, may be enumerated the following: First, here the raw material is produced, and by working it here various expenses incidental to its transportation could be saved—such as profits made by those who invest capital, time and labor in moving it from place to place; insurance during transportation; loss by samplings and stealings from the bales. Second, experts claim that in our warm Southern climate cotton works to better advantage, some estimating this advantage as high as ten per cent. Third, reclamation on false-packed and damaged cotton is direct and easy. Fourth, freights on manufactured goods are less in proportion than on bulky and hazardous bales of cotton. Yarns can be delivered in New York from this vicinity for sixty to eighty cents per hundred. Fifth, abundant supply of operative labor at low rates, and consequent exemption from strikes. Northern superintendents of Southern mills admit the superiority of our factory hands (whites), and the ease with which they are controlled. The average wages paid at the Saluda mills is one hundred and forty-two dol-

lars and eighty-two cents per annum. Sixth, the mildness of the climate enables the operatives to enjoy a larger proportion of comforts on a given amount of wages. In cold climates a larger proportion of carbonaceous food is requisite, which costs more than farinaceous food, nor do the houses for operatives require to be so expensive as in colder regions. Lumber of the best kind costs only twelve to fifteen dollars per thousand. The short winters require less fuel. Land is cheap, and each household can have its garden, cow and pigs. Seventh, there is a home demand for the goods—the larger country stores keep supplies of yarn for sale as regularly as they do sheetings. Eighth, by purchasing seed cotton from the planters and ginning it at the mill, the cotton is in a better condition for working than after it has been compressed into bales, and the expense of packing the cotton, bagging, ties and handling would be saved, as well as the expense of running it through the picker. The wastage cotton undergoes in different ways has been estimated from one-tenth to one-eighth of the bale. Could the entire crop of cotton be converted into yarns at the South, and shipped abroad in that form, it would add one hundred and fifty million dollars annually to the wealth of this portion of the United States. Foreign mills would adapt their machinery to working up the yarns instead of the raw cotton. If but one quarter of the crop could be thus converted, it would be a great blessing to this country, and enable numbers of women and children who are now dependent upon others, to support themselves."

Correspondence American Farmer.

On the Cultivation of Sumac.

I have read with much interest your article upon the cultivation of sumac, as published in your September number. I have for some time thought that this industry may be made a valuable addition to the resources of the South, and particularly to the owners of gray soil lands, upon which this plant appears to flourish most. I would suggest to the proprietors of sumac mills that they should erect drying houses similar to the one described in the Government Agricultural Report for 1869 (page 281), for curing hay in wet weather. This would insure a uniform sample as to color, and would probably induce a larger growth by cultivation, as well as a more extensive collection of the article in a wild state. As the mills are already supplied with the motive power, the other additions necessary might be made at a cost not exceeding \$50 at the utmost. It would be interesting to know what weight of dried leaves per acre the Sicilian grower usually realizes; it is also worth consideration whether or not the greater portion of landed proprietors in this country, who generally possess fuel in abundance, ought not to prepare the sumac for market themselves, instead of selling it in a green or dried state. One mill would answer the purpose (for awhile) of several growers, and as but little skill is re-

quired in the management of it, any intelligent laborer would be able to conduct the business. My flax will be seeded in a few days, when I will let you know the result of the crop so far.

I remain, yours very faithfully,

T. L. HENLY.

[The question as to the weight of dry leaves per acre, in the Sicilian cultivation, perhaps can be answered by some of our readers. We are told that for market purposes the upland sumac has heretofore been preferred; of this the stag-horn varieties, *Rus typhina*, and the smooth sort, *R. glabra* are used, but now it is found that the dwarf or copal sumac, *R. copallina*, is of more value than the others named.

"Once the plantation is made, but little care is needed except to keep it free from weeds; but so long as it is necessary to increase the plantation, care must be taken not to destroy the suckers that spring from the roots, since these are required for reproduction.

"The price paid for good sumac in New York is about four cents per pound, although much of it, like tobacco, from bad handling, is sold at a mere nominal sum. The demand is constantly increasing, and there is no doubt but that on lands adapted to its growth, especially south of 40°, its cultivation will become highly remunerative.

"At present the American supply is drawn entirely from wild plants, but sooner or later its cultivation will be carried on systematically, and on a large scale. In dyeing, the colors produced are a rich yellow, a peculiar shade of green and fawn color, and as before mentioned, the further south we go, the richer the plant is found in tannin, for which alone it must be cultivated with a view to profit, and when Western tanners are so careful in their manufactures as are those East, and especially those in Europe, we may look to see the west and southwest supply them with as good an article of sumac for their *sheep* and goat morocco, as is made anywhere."

The following description is from the Agricultural Bureau Report for 1869:

"The sumac is a small tree or shrub, of the natural order of *Anacardiaceae*, and is represented by the single genus *Rhus*, a name applied on account of the reddish color of the berries.

"The species in the United States, which possess an economic value, are *R. typhina* or stag-horn sumac, which attains the size of a tree twenty feet high; *R. glabra*, or smooth sumac, a spreading leafy bush, from four to ten feet high; *R. copallina*, a dwarf species, from one to seven feet high, with fruit agreeably acid; *R. pumila*, a dwarf species of the pine barrens, from North Carolina to Georgia; *R. aromatica*, a fragrant sumac, a dwarf, straggling bush, found from Vermont, westward and southward; *R. metospium*, a tree from fifteen to twenty feet high, found in southern Florida; *R. cotinoides*, species allied to, or which, as Gray thinks, may be the same as the *R. cotinus*, (exotic) or Venetian sumac, or smoke plant, and which occurs in the interior of Alabama."

Scientific Department.

The Food of Plants.

From an Address of Dr. James R. Nichols, Editor of the Journal of Chemistry.

POTASH—ITS GREAT VALUE TO THE FARMER FOR HIS GRAIN CROPS.

Potash holds a most important place in the list of substances consumed by plants, and hitherto much anxiety has been manifested regarding a supply equal to our wants. A few years ago we were acquainted with no sources of the agent save that of the ash of plants, and as mineral coal came into use for furnishing household warmth, wood-ashes and the potash salts obtained from them became very scarce and costly. Every year the farmer removed from the soil large quantities of potash in his crops, which he could not return again through the excrement of his animals, and therefore it was evident his lands were becoming impoverished to an alarming extent. High cultivation, as respects potash, increases this impoverishment, as all cultivated plants are richer in this substance than those growing spontaneously. To obtain a clear understanding of the needs of the soil, it may be stated that an acre of wheat producing twenty-five bushels of grain and 3000 pounds of straw, removes about forty pounds of potash in the crop. Can any farmer before me conceive of that number of pounds of potash existing in the soil of any one acre of land upon his farm? We know it must be present and within easy reach of the plants, else not a blade of wheat can grow and mature the seed. Nearly all soils of course contain potash, but the quantity is often insufficient for crops of any of the cereal grains.

A crop of corn raised upon my farm in 1869 of 106 bushels to the acre, removed in kernel and stock, 156 pounds of potash and 80 pounds of phosphoric acid. Now, I did not supply to the crop all this potash and phosphoric acid, but I gave an important lift in feeding to the plants bone dust and wood-ashes, which supply these agents. We cannot, gentlemen, raise large crops of corn without furnishing potash in some assimilable form, for a small crop of 50 bushels to the acre requires about 75 pounds of the agent. A fair crop of oats, say 50 bushels to the acre, removes only about 13 pounds of potash; barley and rye remove not far from 30 pounds each.

THE ACTION OF POTASH AND PHOSPHORIC ACID ON THE TUBERS AND TOPS OF POTATOES.

Now we have all observed the great deterioration in our potato crops during the past ten or twenty years, and what is the cause of this alarming decrease of tubers? Can science, can chemistry, point out the reason, or aid in remedying the difficulty? I think it can, and in order to place the matter before you in a clear light, let me point out the kind and amount of food which the potato demands. I have a field of potatoes upon my farm which

I expect will yield 300 bushels to the acre, which may be regarded as an old-fashioned crop. I know that this crop will remove from the soil, in tubers and tops, at least 400 pounds of potash; I am also certain it will remove 150 pounds of phosphoric acid. Now these amounts are very large, and serve to show that the potato plant is a great consumer of the two substances; and also it shows that in order to restore our potato fields to their former productive condition, we must supply phosphatic compounds and substances holding potash in large quantities. For six or eight generations our fathers have been exhausting the soil by removing these agents in their potato and other crops, and we have reached a time when the vegetables are starving in our fields for want of their proper food. Our farmers have found that new land gives the best crops, and this is due to the fact that such fields afford the most potash. But so long as we crop our pastures so unreasonably we cannot resort to new land, as land is not *new* that has had its potash and phosphatic elements removed by grazing animals. Remember that a potato field which gives but 100 bushels to the acre requires at least 160 pounds of potash, but by allowing the tops to decay upon the field, 60 pounds of this is restored to the soil again, as that amount is contained in them. A medium crop of potatoes requires twice as much phosphoric acid as a medium crop of wheat, so that in two years with wheat the land is deprived of no more of the agent than it loses in one year with potatoes.

THE ACCUMULATION OF MANURIAL MATTERS SIMPLE WHEN THEIR NATURE IS ONCE UNDERSTOOD.

My aim has been to point out the nature of the materials which plants require, and to impress upon the minds of those who hear me the great truth that when the farmer has gained this knowledge and also learned the quantity necessary for a given crop, the accumulation and use of these materials is as simple as that of supplying raw materials for the manufacture of cloth, boots and shoes, or any other manufactures. A field in proper condition for culture should contain in ample abundance all the inorganic materials which the intended crop requires, and these materials should be in an assimilable condition, or, in other words, they should be in a soluble condition, so that by the aid of water they can be taken up and carried through the plant organism. The proper manures for wheat and corn are the nitrogenised varieties, or those which hold nitrogen, either in the form of ammonia or as nitric acid. These should be conjoined with phosphates and potash in considerable amounts. For potatoes, phosphates and limes are required; and the latter element, lime, enters largely into the leaves, and is an important article of food for the vegetable. Gypsum or plaster, which holds lime and sulphuric acid, is a valuable manurial agent for potatoes, especially on moist land. I have used it with satisfactory results. Roots, and also wheat, should be supplied with magnesia, as it is found

largely in the form of phosphate in the ash of these plants. But enough has been said to show that each variety of plants demands peculiar kinds of food, and unless it is supplied by the soil, or through our agency, it is impossible for them to flourish.

During the past eight years I have been endeavoring to guide the operations of a farm in accordance with the teachings of science, and I am happy to say that I have not been led astray. It has been a delight to observe how exact and beautiful are the laws of nature as displayed in the productions of the fields. There has never been a time when soil cultivation, as a pursuit, was more hopeful and promising than the present. We have just learned the important fact, that an abundance of plant-food has been stored up for use in mines and rocks, and that we have only to reach out our hands and take all we require. Ten years ago who could have dreamed even of such vast deposits of potash as have been opened up to us at the Stassfurth salt works in Germany? Some idea of the supply may be formed from the fact that at the present time more potash is furnished from these mines than from the wood-ash sources of the whole world. About 13,000 tons of potash were sent to market from the United States and British America in 1870; and yet Stassfurth, where a dozen years ago it was not supposed that a single ton could be procured, 30,000 tons of the muriate of potash were manufactured and supplied to consumers upon both continents during the past year. The surface salts at these mines which hold the potash are practically inexhaustible, and millions of tons will be supplied in succeeding years. No doubt our own salt mines will be found, upon careful examination, to afford potash, and hence we may look with confidence to the rapid cheapening of this most useful product.

THE PHOSPHORIC ROCKS OF SOUTH CAROLINA.

Ten years ago who could have supposed that along the river-beds upon the coast of South Carolina there were millions of tons of rocks holding that important element of plant-food, phosphoric acid? These rocks were indeed known, but their important character was not understood. The phosphoric rock-beds of that region extend over an area of several hundred square miles, and the beds are in places twelve feet thick. It is estimated that from five hundred to a thousand tons underlie each acre. How vast is this supply of an agent of the highest importance to agriculture, and what a source of national wealth is open to us. At the present time there is great activity in the work of grinding these phosphatic rocks, and with the aid of acid, preparing the superphosphate of lime for agricultural uses.

NATURE HAS PROVIDED FERTILIZERS FOR OUR SOILS.

Let me press upon your attention in closing two important and interesting considerations. One is, that Nature has provided ample materials to supply all our wants. In mountains and caverns and streams she has deposited all

elements and combinations, which are essential for our well being and progress, and it is unreasonable and wicked to doubt regarding the future; and second, do not disparage science, but sustain and foster it, for it holds the key which is alone capable of unlocking Nature's store-house, and bringing forth from the dark recesses of earth those rich materials which have been provided for our sustenance and happiness.

The Brain during Sleep.

Claude Bernard has recently contributed to the *Revue des Deux Mondes* a valuable paper "On the Functions of the Brain," which has been translated for the November number of the *Popular Science Monthly*. Sleep, as he remarks, "is rightly considered the state of rest of the cerebral organ;" and he proceeds to give the following interesting account of the experiments by which it has been proved that sleep is not the result of compression produced by the accumulation of blood in the brain, as was commonly believed until within a few years:

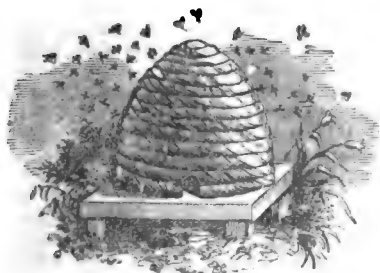
"It has been shown by direct experiment that, during sleep, the brain, instead of being congested, is on the contrary pale and bloodless; while in a state of wakefulness the circulation, becoming more active, provokes a flow of blood proportioned to the intensity of cerebral activity. In this respect, natural sleep and the anæsthetic sleep of chloroform are alike; in both cases, the brain, sunk into rest or inactivity, presents the same paleness and relative bloodlessness.

The experiment is made in this manner: A part of the bony covering of an animal's skull is carefully removed, and the brain laid bare, so as to study the circulation at the surface of this organ. Then chloroform is administered to produce insensibility. In the first exciting stage of the action of the chloroform, the brain is observed to grow congested and to lap over at the edges; but as soon as the stage of anæsthetic sleep is reached, the substance of the brain sinks in and grows paler, presenting a languid movement of capillary circulation, which lasts as long as the state of sleep or cerebral rest continues. For the study of the brain in natural sleep, a circular trepan is made on a dog's head, and the piece of bone removed is replaced by a watch-glass carefully adjusted to the exact opening, so as to prevent the irritating action of the air. The animals subjected to the operation survive it; and observations on their brain through this sort of window, while awake and when asleep, prove that when the dog is asleep the brain is always paler, and that a fresh afflux of blood is regularly noticed on his awaking, when the functions of the brain resume their activity. Facts analogous to those observed in animals have been studied directly in the human brain. Upon a person injured by a frightful railroad accident, the effect of a considerable loss of brain-substance was examined. The brain was visible over a surface of three by six inches. The patient suffered frequent and severe attacks of epilepsy

and coma, during which the brain invariably expanded. Sleep succeeded these attacks, and the cerebral hernia gradually subsided. When the patient awoke, the brain again projected and rose to the level of the surface of the external bony table. In the case of another person, injured in consequence of a fracture of the skull, the cerebral circulation was studied during the administration of anæsthetics. With the first inhalations, the surface of the brain became branchy and filled with blood; the flow of blood and throbbing of the brain increased, and then, at the instant of sleep, its surface subsided by degrees below the opening, while at the same time growing relatively pale and bloodless.

Briefly, then, the brain is governed by the common law that controls blood-circulation in all the organs. By virtue of this law, when the organs are at rest and their action suspended, the circulation in them grows languid; and it increases, on the contrary, as soon as activity is resumed."

The Apiary.



Winter Management of Bees.

About the first of November bees should all be examined and brought into winter quarters. Those that have not enough honey should now receive especial care by the apiarian, as he is prepared to know their exact condition both as to quality as well as quantity. If you are going to leave them standing out of doors, they should be placed on a stand one foot high, and within one foot of each other. They should be covered with a good tight roof, a tight wall on the north, west and east; ventilate well; place boards in front of hives, down so far that the sun will not strike them during the winter. Place straw between the hives, as this will serve to keep them from being affected by the changes of the weather. They being well ventilated, will need no further care during the winter, except to occasionally look and see if they are affected with dysentery. If so, they will show it by their dark-colored feces around the entrance to their hive. Numbers of them will also fly out and leave their mark; and many of them, if they be all right, and being in the shade, will not, and have no occasion to, come out at all. If they do, they are warm enough to return without much loss. Better

leave them in this position until spring—November, December, January, February, and frequently March. In this northern climate, bees will keep quiet and begin to increase about the first of March.

Every bee-keeper should examine his stocks late in the fall, or as soon as they are done gathering honey. Some stocks are inclined to breed too late and too much for their means of supplies, and if left to themselves will exhaust all their honey long before spring, and then die. They should be carefully examined, and if the bee-keeper finds too much brood, it would be better to change one or two of their combs with another swarm that may be destitute of bees, giving in exchange frames having more honey from swarms that can spare it. This is very easily understood, if you will examine the inside of the hive. In doing this, if you deem it advisable, you can unite two or more swarms together. In uniting swarms we strengthen them, and make respectable swarms of them. I have practiced this a great deal, and found it to work admirably.

The reader will ask, why is it necessary to examine the bees in the fall, or before going into winter quarters? We answer—first, we can ascertain the cause of a scarcity of bees, should there be any; if over-swarming has been the cause, or a barren queen, perhaps a drone-laying queen. If caused by disease, such as foul brood, we certainly should know their exact condition. The loss of queens, more than anything else, gives other bees a chance to rob and the moth to destroy the comb.—A. F. Moon, in *Live Stock Journal*.

HINTS TO BEGINNERS.—Beginners in bee-keeping should not, when going into the business, build costly bee-houses, provide high-priced, untested patent hives, purchase a large number of colonies, or buy "three-banded," Italian queens at a time when as yet they can hardly tell a drone from a worker. Begin moderately and hasten slowly. The needful experience in practical bee culture is much more easily and far more efficiently acquired by careful attention to a few choice stocks, than by a hurried supervision of a large number, even with the aid of manuals and text books. Plain, simple movable frame hives, too, will be found better suited for the requisite manipulations, than fanciful and complicated contrivances, devised by persons really ignorant themselves of the habits and wants of bees. And colonies placed in an open situation, with their hives readily accessible from all sides and somewhat sheltered or shaded by trees or vines, will be much more conveniently managed than when placed in ordinary sheds or out-door bee-houses.

Study first to know what is required for success, and then extend your operations when you are sure that you can have the business "well in hand." Precipitancy, in most kinds of business, is the ruin of beginners, and bee-keeping needs study and caution to assure success.—*American Bee Journal*.



The Stock Yard.

The Horse Epidemic—Influenza.

The following was delivered as a lecture, by Professor A. G. Copeman, at the New York Veterinary College in 1866. As it treats the complaint now raging, it is of great interest and importance:

Definition.—Is a specific febrile disease, invariable in its essential characteristics, frequently prevailing as an epizootic, attended with lassitude and prostration to an extreme degree; chills, and great sensibility to cold over the surface of the skin, the eyes injected and tending to fill with tears, the nostrils discharging an acrid fluid; cough prevails, with yellow expectoration, sometimes also attended with giddiness and lethargy. Fever attends the disorder, sometimes slight and sometimes severe, and of a type varying in different epizootics and localities.

Pathology.—A specific poison is believed to be absorbed and to infect the blood, when, after a given period of latency, it causes great general depression, extreme debility, together with fever. The specific actions of this poison are on the mucous membranes, especially that of the eyes (hence the familiar name, "pink eye"), of the nose, and of the bronchi. In a small number of cases on the mucous membrane of the fauces, causing sore throat, and, in a smaller ratio, on the substance of the lungs, and of the pleura, causing inflammation of these organs. In many instances the disorder terminates in great flatulence in the bowels—diarrhea. These different pathological phenomena vary in frequency and complexity in different seasons and places. In most cases, when the poison is of sufficient intensity to produce fever, its type is sometimes remittent. Its usual duration is one, two, or three weeks, when it terminates in an abundant sweat, and which not unfrequently leaves great debility behind it.

Symptoms, Course and Complications.—The symptoms of influenza assume a variety of different forms. Thus, catarrh often exists without the fever, and in a similar number of cases the fever without the catarrh. Severe nervous depression and great prostration were frequently the most prominent symptoms, while in other instances the bronchial affection alone

harasses the patient. The disease usually begins suddenly with chilliness and shivering, rapidly succeeded by an immediate and evident impression upon the mucous membranes of the nose, mouth, frontal sinuses, trachea, and bronchial tubes to a great or less extent. General soreness accompanies these symptoms, with great depression and an extraordinary weakness, which always bear a close ratio to the extent of the pulmonary affection, and consequently to the severity of the disease. These symptoms are usually accompanied by fever, and a short, suppressed cough, and a difficulty of breathing; the alae of the nose, the lips, and the membranes of the eyes of a pink or dark orange hue. The tongue is moist, or coated with a yellow mucus, the skin soft and without morbid heat, the pulse little augmented in frequency. But, although each of the particular symptoms may be mild, there is a languor, debility, and loss of spirits far beyond what might have been expected, and almost exceeding that of "lung fever." The average duration of these cases varies from five to seven in the mild forms, and from seven to twelve in the more severe. In mild cases, such phenomena constitute the whole disease, and the patients recover about the eighth or tenth day. In many instances, however, the patient, in addition, will suffer from mild or severe sore throat—a cough comes on and continues for many weeks. In a few cases the symptoms are of a still more aggravated character, the fever being more marked, the pulse accelerated, the skin hotter and the cough more troublesome; and these conditions are often followed by inflammation of the lungs. The pulmonary complications may be arranged into three forms. First, capillary bronchitis; second, bronchitis supervening on chronic disease of the lungs; third, pneumonia.

The accession of capillary bronchitis is indicated by the chest symptoms becoming more severe, and the fits of coughing and the difficulty of breathing, at first quite disproportionate to the cough and to the physical signs. The expectoration is scanty, and consists of a yellowish, tenacious mucus. The pulse becomes rapid, eighty to one hundred and twenty; the tongue covered with a whitish, soapy fur, and prostration is extreme. The only auscultatory signs are roughness of the inspiratory murmur, with occasional slight crepitation near the lower third of the chest. There is evi-

dently great soreness and contraction of the chest. Crepitation, unattended by dullness on percussion, soon extends over the greater or less extent of both lungs, and the difficult breathing speedily becomes so intense as to be panting. The cough is hacking and the expectoration very viscid, of a greenish-yellow color, and sometimes streaked with blood. The respirations are quickened, but there does not appear to be any uniform connection between the extent of the disease and the disturbed ratio of the pulse and respiratory movements. The pneumonia has, in some years, been *characterized by great debility*, and presenting a striking contrast to the usual symptoms; the pulse, ordinarily so large and full, has been slow and small, and though sometimes between fifty and sixty, has ranged more commonly from thirty to forty. The patients, also, who generally preserve a good deal of power in the ordinary forms of pneumonia, were now so weak that they were often obliged to be supported to get them out of the stalls. Throughout the progress of this disease, so great is the prostration that the patient's loss of muscular power is the most distinguishing feature of the disease. This extreme debility often continues—sometimes after all other symptoms have passed away. The disease generally terminates favorably by perspiration, or by copious secretion, or mucus from the bronchia, or a copious discharge of urine. Toward the termination of the complaint, rheumatic affections, especially of the hock and fetlock joints are by no means unusual.

CAUSES AND MODES OF PROPAGATION.—The attack of influenza is for the most part so universal that at certain seasons of the year a large majority of horses in our "sale stables" suffer more or less from its prevalence, and that without respect to age, sex or condition. The nature of the epizootic influence, which gives rise to influenza, is quite unknown. Sudden changes of temperature appear to assist the development of the influenza poison, and exposure to cold predisposes the horse to disease. Few horses suffer more than one attack of influenza in the same epizootic, although many relapse; but one attack of this disease in no degree protects the constitution from a second attack in another epizootic.

PROGNOSIS.—Colts and young horses die in a very small proportion, unless in a previous state of ill-health. The mortality, however, among the aged has in every country been at times great from this disease. It has been remarked, also, that the disease, if not fatal in itself, left the patient of whatever age often greatly debilitated and out of condition, and those with "tender lungs" who suffer from it often continue to cough for several months.

TREATMENT.—As a general rule, the great majority of cases in epizootics of influenza have scarcely required any medical treatment. In favorable seasons many, indeed, are so slightly indisposed as to require nothing more to their cure than to be kept for two or three days from "high feed," oats, corn meal, etc., and to

get soft food, scalded bran, and a small quantity of sweet hay, tepid drinks, or hay tea, to which a little niter or phosphate of soda may be added. A fever pill, composed of camphor, niter, ginger, and flaxseed meal, at the beginning of the disease, is useful in moderating the fever, and nature seems to point to the repetition of it afterward, when there is a disposition to sweating. Nothing likewise is found so successfully to mitigate the cough as a gentle opiate at night. A smaller number, however, will require medical attendance either from the severity of the bronchitis, the recurrence of pneumonia, severe sore throat, or more frequently from the debility induced by the disorder. In general, when the bronchitis is severe, but the substance of the lung as yet unaffected, linseed poultices to the chest, or hot vinegar, are often of essential service, and this treatment, together with neutral salts, opiates, and diaphoretics in general, will effect a cure. In all the great epizootics of influenza, however, it has been remarked that a cough is one of the most annoying symptoms, and that the whole class of *expectorants* were either useless or uncertain in their action.

Bloodletting and cathartics are dangerous in the highest degree, while "sedatives"—as digitales, aconite, hellebore, emetic tartar, etc.—increase the prostration without benefitting, in any commensurate degree, the pulmonary disease. During convalescence, acetate and citrate of iron, in small doses, will be found useful tonics; also gentian, columbi and cinchona barks. In cases complicated by pneumonia, it has been found that depletory remedies totally fail to relieve the complaint. It is in this form of pneumonia that small doses of "diffusible stimulants," sesqui carbonate, and the aromatic spirits of ammonia, nitrous ether, etc., have been found so advantageous.

As influenza is a *specific fever* characterized by pure debility, it appears to me that no permanent good can possibly result from antiphlogistic remedies of any kind. In all cases we should, from the commencement, endeavor to strengthen the patient. The prostrating effect of the disease upon the entire organism, and the probable dependence of the more alarming symptoms upon the poisoned condition of the blood, these are circumstances which should induce every cautious practitioner to "think twice" before adopting the "heroic" treatment recommended by Youatt, Percivall, and other systematic authorities. All that art can do in influenza is to *husband Nature's resources* by warm clothing of the entire body of the patient; pure air to breathe, a carefully-selected diet, and tepid, saline waters to drink, are among the means I have found most useful.

THE English Milk Journal describes a case where a milk dealer on a second conviction for diluting milk with water, was not only fined but required, in accordance with the provisions of a special law, to pay the cost of a conspicuous notice in a leading paper, giving in full an account of the transaction.

Soiling Sheep.

EDITOR LIVE STOCK JOURNAL—Having read papers from your pen highly commending the soiling system for summering animals, in lieu of pasturing, I should like to get your opinion of soiling sheep in the South. We ought to keep more stock, for the good of the land, and also to furnish food and clothing. We don't know much of dairying, and can't handle cows profitably, but if sheep could be soiled, we might raise soiling crops on our cotton and sugar lands, while resting. These crops would come well in the rotation, make us money in the sheep, and furnish us manure, sorely needed here. This question is of interest to many of your Southern readers.

T. E. Y.

Atlanta, Ga.

We are pleased to learn, from this and other letters, that Southern planters are beginning to study the advantages of mixed husbandry. The question of the practicability of soiling sheep in the South is comparatively new, but we have very decided convictions upon it, and shall freely give them, premising that our experiments have all been tried in New York.

Sheep may be soiled as safely as cattle, care being taken not to keep more than fifty to one hundred sheep in an enclosure, and not to keep them more than seven to fourteen days on one plat of ground. It would not pay to cut green food and soil sheep on those plantations with large hilly ranges of pasture, but upon the bottom lands, the long cultivated cotton fields, this system would have many and great advantages.

First, it would enable the planter to feed large numbers of sheep upon lands otherwise idle. Ten sheep may be fed abundantly through the summer upon an acre, and through the year upon two and a half acres. The income from these, with reasonable management, could not be less than \$50. This would give an average of \$20 per acre as the direct result of soiling sheep.

Soiling would also offer an excellent opportunity for planters to utilize on their own lands their cotton-seed cake. This is a most excellent food now largely going to waste, both as a food and as manure. Could all the cotton seed of the South be economically used in the production of meat, milk and wool, and then in fertilizing future crops, she would produce a surplus of meat, there would no longer be complaints of a lack of dairy products, and her wool crop would become an important element of her prosperity. The personal attention required in soiling would render it easy to give the fattening sheep small quantities of cotton cake, and soon their mutton would rival that of England. The economical feeding of all the cotton cake, on Southern soil, would produce a fertilizer of more value than all the guano and other commercial fertilizers now purchased. English feeders think they can afford to purchase and feed oil cake at forty to fifty dollars per ton for the return in manure; and as this cotton cake contains just the elements needed in the growth of cotton, how

much more can the Southern planter afford to feed this to animals, and thus return to the soil what will not cost him more than one-third that sum. The cotton crop is not an exhausting one, if only the fiber is sold, and the seed and stalk are returned to the soil.

Second, the soiling of sheep can be performed mostly by machinery. The green crop may be cut with the mowing machine or reaper, raked and loaded upon the wagon with the hay-loader faster than it is mown, drawn to the feeding field and placed in racks. One good hand, with a mule, can easily feed three hundred sheep. It will, of course, take longer, in proportion, to feed a small number. The whole cost of the labor would be saved in dispensing with fences.

HOW SHEEP MAY BE SOILED.

Some have thought it impracticable to feed sheep on this plan, because of their liability to disease when herded together in small enclosures. But the safety against disease must be sought in the frequent change of feeding fields.

Hurdle fences must be provided, light and easy to handle. Surround as many rods as you have sheep in the flock, not exceeding one hundred. If you have more, divide them into flocks of one hundred or less. Place racks on the north side of the field, or on the shady side, if it has one. The green fodder will be placed in these, in moderate quantity. Three feeds should be given per day. This feeding field should be changed every seven days. This change is easily made by having extra movable fences to surround three sides of the field adjoining, when they may be transferred to the new enclosure. One week will give a fair dressing of manure, and to preserve it from evaporation, one bushel of land plaster may be sown upon a hundred rods. Sheep thus treated will be healthy.

In soiling sheep, the rye, clover, oats, millet, Hungarian grass, corn or other soiling crop must never be suffered to ripen, but should be fed in a very succulent state. Sheep prefer fine, juicy fodder. They would eat with avidity any of the indigenous grasses of the South, if cut while tender.

It will be observed that soiling enables the feeder to command the condition of his sheep. He may separate those he wishes to fatten and mature them as rapidly as he chooses. A little cotton-seed meal or corn given with the green food will speedily ripen them for the knife.

The Southern soil is well adapted to the growth of clover and most green crops useful for soiling. We believe sheep may be fed quite as profitably in the South as swine, for they are valuable for two purposes, both flesh and wool, while swine are only valuable as food.

We do not agree, however, with our correspondent, that the dairy may not be profitably managed at the South. We will discuss this question in a future number.

Importance of Thoroughbred Bulls.

Men, who have bestowed little thought upon the subject, are not entirely convinced of the advantage of using thoroughbred bulls only, in advancing the quality of their stock, and a little explanation is necessary to enlighten them. In all thoroughbred animals, of whatever kind, the good qualities are *concentrated*. That is to say, *they breed alike*, throughout, from father to son, mother to daughter, and so on down to indefinite generations. There is unmistakable likeness prevailing among them. We have seen that our native cattle are made up of incongruities, in size, shape, color and quality. No uniformity of likeness exists among them. Some are good, more of them indifferent, both in appearance and quality. Some of the young resemble the sire, others the dam, and a great many neither, but take the appearance of ancestral relatives generations back. They have no fixed or permanent character, but are an aggregation of various qualities and blood, possessing (owing to their miscellaneous mode of descent) no particular characteristics which can be depended on. It is this uncertainty which detracts from their value. Use a thoroughbred bull to these miscellaneous-bred cows, however, and his blood is so strongly infused into their offspring, by his own fixed characteristic, that his stock at once partake largely of his own quality and appearance. Now, let the full blood of this bull be repeated in the half-blood heifers, and his blood becomes still stronger in them, and their stock more nearly resembles his blood (there being two crosses of it in them) than that of their dam, which has one-half the inferior or native blood, and so on to any number of these full-bred crosses, until the appearance of the progeny resembles the thorough blood almost beyond a distinction to the inexperienced eye. On the other hand, among the progeny of the cross-breeds of the first generation, or half-breeds, some very choice ones will be found partaking largely of the qualities of the sire.

An unpracticed breeder may think that with so promising a calf, a bull may be raised that will answer his purpose, and the quality of young stock from common cows (from which the bull sprung) will be good enough; and, therefore, he uses him for breeding, accordingly, and finds his progeny in every way inferior, and wonders why it is so. The reason is plain: this half-bred bull had, in himself, one-half of the inferior or native blood, which was just as strong in him, and as likely to transmit its inferior quality through inferior dams, as his own share of the good blood that he has drawn from his sire, and thus there is little progress made in improvement from this mongrel bull. Still, he is better than the "native" bull, and should be used when a better one cannot be had. The same result will occur from breeding these grade animals among themselves. The same inferior blood is quite as likely to strike out among them as the superior, and the incongruity appears in their various characteristics, and all higher improve-

ment ceases. Hence, there is no certainty of *continuous* improvement, otherwise than by the use of thoroughbred bulls.—*L. F. Allen, in Live Stock Journal.*

Berkshire Hogs.

From the Report of Mr. A. B. Allen, to the Swine-breeders' Convention.

SUPERIORITY OF BERKSHIRE MALES FOR CROSSING COMMON SWINE.

11. As the Berkshires were brought to their present state of perfection at an earlier date than any of our present improved breeds of swine, their good qualities have become *prepotent*. This makes them superior to all others for crossing on the common swine of the country, and places them highest in value for this purpose. It is to be hoped, therefore, that greater attention will be paid hereafter by our farmers to securing Berkshire boars for their use; and that this increased demand for them, will stimulate the breeders of the pure stock to invariably select their best for propagation; thus keeping them up to the highest state of perfection possible to attain. The Berkshire improves most other breeds by being crossed upon them; but we know of no other breed that can improve him—he *stands unrivalled among swine*.

POINTS OF THE BEST IMPROVED BERKSHIRE SWINE.

9. A fine snout; slightly dished face; jowls moderately full; giving the head nearly a cone shape, and making it about as long to the point of the nose, as it is thick through at the neck. The eyes bright and rather large; the ears slender, rounding to a point, erect and playful. The hams and shoulders full, harmoniously rounding, and so large that, standing in front or behind the animal, the sides of the body can scarcely be seen. The hams of the female generally larger than those of the male, while the shoulders of the latter should be proportionally larger than those of the former. The back broad and slightly crowning; the body round, full, deep, well ribbed up and rangy. Legs standing rather wide apart, and well under the body; moderate as to length, with small, tough feet. Bristles are objectionable. The hair should be soft; the skin thin; the flesh firm and elastic under the touch of the fingers. Looking at the whole animal, it should show fine style, with a bright, placid expression, and possess a quick, easy, elastic, up-headed carriage.

GOOD MEN MAKE GOOD HORSES.—A horse is never vicious or intractable without a direct cause. If a horse is restive or timorous, you may be sure that these faults arise from defects in his education. He has been treated either awkwardly or brutally. Commence the education of a horse at his birth; accustom him to the presence, voice and sight of man; speak and act gently; caress him, and do not startle him. All chastisement or cruelty confuses the animal and makes him wild. They are good men who make good horses.

A Nut for Physiologists to Crack.

EDITORS OF THE MARYLAND FARMER—A very remarkable physiological case has come under my observation, and it may be worthy of record. I had a home-raised heifer, which, at two years old I presumed to be three months gone with calf, and about that time her udder began to increase in size, and a few days afterward became so large that I directed her to be milked. At the first milking she gave about one gallon of milk and continued from that time to yield more than either of my other two cows for two years, without any intermission.

During the last summer she became very troublesome on account of jumping fences, and I fattened her for beef and killed her on the first day of this month. When opened there was found in her womb a perfectly developed calf about the size of a mouse. Its length was about three inches, and its weight I judged to be about one ounce. As from the time of first being milked, this heifer showed no inclination for breeding, extraordinary as it may seem, I think it probable that this calf had remained in the dam for a period of two years, and at the end of that time appeared to be in a healthy state. I can state from my own knowledge the following facts:

1. This heifer milked well for two years without having had a calf or giving any indications of a miscarriage.

2. She was always very healthy and a good feeder and became fat.

3. She never exhibited any desire to be served by a bull during the first two years, and it is believed she had but one period of gestation.

Physiologists may pooh! pooh! but they cannot controvert the facts as stated.

CHARLES PAINTER.

OWINGS' MILLS, MD., Nov. 8, 1872.

How English Grooms Care for Horses.

A correspondent of the *New York Commercial Advertiser* tells how some English grooms at Saratoga are teaching Yankees the care of horses:

To-day I asked one of the grooms, who has spent twenty years in the stables of royalty, what he had to say about our American way of taking care of a horse.

"Why, sir," said he, "you don't take good care of your horses; you think you do, but you don't."

"Why?" I asked.

"Because when a horse comes in all wet with perspiration, you let him stand in the stable and dry with all the dirt on. In England, we take the horse as he comes in from a drive, and sprinkle blood-warm water all over him, from his head to his feet. Then we scrape him down and blanket him, rubbing his legs and face dry. Thus, in an hour he is clean and dry, and ready to take a good feed, while, with your way, he will stand and swelter for hours, and finally dry, sticky and dirty. Our horses never

founder, and never take cold. We never use a curry-comb. You scratch your horses too hard. The only care necessary is to have the water not too cold; then bathe them quick, and blanket them instantly, while you are rubbing their legs.

REMEDY FOR HOVEN IN CATTLE.—The *Practical Farmer* says: We once saved the life of a Short-horn bull which cost us near \$600, in three minutes, by twisting a wisp of hay into a band, placing it in his mouth, and tying it up tightly behind the horns. The working of the jaws to get rid of this incumbrance liberates the gas in the stomach, and relief is immediate. We know by that trial ourselves, that this remedy is effectual, safe and simple. One of our best Chester county farmers tells us he uses a broom-handle in the same way, because quick action is necessary, and this is soonest at hand. Anything binding on the corners of the mouth, so as to excite action of the jaws of the animal to get rid of it, will answer.

BETTER FEED, BETTER MANURE.—Under this heading the *Maine Farmer* says:

"Few truths in agricultural economy are better established than this—that the better and richer the feed given to animals, the better will be the manure made. Animals kept on straw, and coarse, rough fodder, with little or no provender, even if they have this sort of food in abundance, will produce manure of very inferior quality to that made from corn meal, cotton seed, rape cake, or other articles rich in nitrogen. It is a custom with the best English farmers—a custom as well as a business—to feed for the purpose of obtaining the manure. And while there is almost always a loss in feeding animals upon purchased food, leaving out of calculation the manure they make, all experiments show that feeding animals is the cheapest mode of obtaining manure, especially if one wishes to restore or maintain the fertility of a farm."

GUANO DEPOSIT OF PERU.—Harry Meiggs, the great railroad operator of South America, has discovered, on the mainland of the west coast of Peru, the most immense deposit of guano ever seen anywhere. The deposit is said to extend for several miles along the coast and reach far inland. The Chincha Islands have heretofore been considered the richest in guano production, but this last discovery shows conclusively that this is of much better quality and much easier to handle than the former. Millions upon millions of tons can be dug cheaply and transported to all parts of the world at a much lower figure than heretofore. This valuable fertilizer will no doubt be used much more extensively in this country, as well as Europe, as the price at which it can be furnished will place it within the reach of all. This discovery alone is worth more to the Peruvian government than all the money they are to pay Mr. Meiggs for constructing railroads.

The Poultry Yard.

A Varied Diet for Fowls.

There are no animals more omnivorous than fowls—fish, flesh, herbs and grains being devoured by them with equal relish. We say equal, for though they commonly pounce upon meat with greater avidity than grain, this is generally because it affords a rarity, and a flock kept for a while almost entirely on animal food, will show some greed for a few handfuls of corn. Now, these animals accustomed to use a varied diet should not be confined to an unvarying one. There are, indeed, some species which are naturally limited to one or few kinds of food. Thus, cattle do well enough, although kept months on grass alone, and a tiger will thrive with nothing but lean meat on his bill of fare. But with other animals, as with the human race, for instance, the case is different, for no person can maintain the highest efficiency when confined to one article of food. No matter how fond we may be of a particular dish, we lose relish for it when allowed nothing else for a number of consecutive meals, and the intense craving for variety indicates as its source something more than mere appetite. It gives evidence of real necessities of the system which are constantly varying with the changing circumstances of weather, employment and other conditions. The fondness for variety shown by fowls is as significant of real needs as we have found it to be with ourselves. In purveying for them a judicious variety, selected from the three general divisions, animal food, fish and vegetable and grain is at all seasons absolutely necessary for young and old, in order to make them perfectly thrifty. True they will not starve on hard corn and water—neither will they pay a profit so kept. The kinds of grain allowed must be varied the week through, consisting of corn, ground and unground, raw and cooked; oats, ground fine; wheat bran and middlings; wheat in the kernel, barley and buckwheat; rye may be given occasionally, and brewers' grains if convenient. As for animal food, the choice of suitable and economical kinds depends upon locality. Near the shore use clams, and various sorts of fish, boiled. In some parts of the country young calves can be bought for what their skins are worth, and the carcasses boiled in an arch kettle, the flesh being so tender that fowls can pick it from the bones without any mincing being required. Tallow chandlers' scraps are very good for poultry. In warm weather fowls generally find all the animal food they need, such as worms, bugs, etc. The fresh vegetable department may be filled with young, tender grass, in summer, cut from a lawn where there is a fine growth, every morning when the dew is on, and thrown to such fowls as are yarded. Poultry at liberty should be allowed access to a plot kept closely shaven, for grass soon grows too rank. Sometimes it is convenient to feed the young beets, onions and lettuces that are thinned from the

rows, to poultry that is kept shut up. In winter, chop up carrots, turnips, beets, mangolds, or cheap seedling apples, if the latter can be afforded; and to teach the fowls to eat these, thoroughly mix with meal till appetite is acquired, when they may be given alone, raw and cooked. Boiled potatoes and raw cabbages will generally be eaten without any previous training, and this fact indicates that they are the best vegetable food for winter. Remember that a varied diet, consisting of grain, vegetables and meat, is essential to success with fowls.—*Exchange.*

About Brahmas.

After careful observation and considerable experience I find that, for all general purposes the light Brahmas are the best fowls I have yet found.

First—They do not roam all over the premises, which to those who value a good garden is considerable of an item. My Brahmas never think of crossing an ordinary board fence.

Second—They are more reliable layers, and lay larger eggs and more of them.

Third—Notwithstanding others' testimony, I find them to make good setters and most excellent mothers.

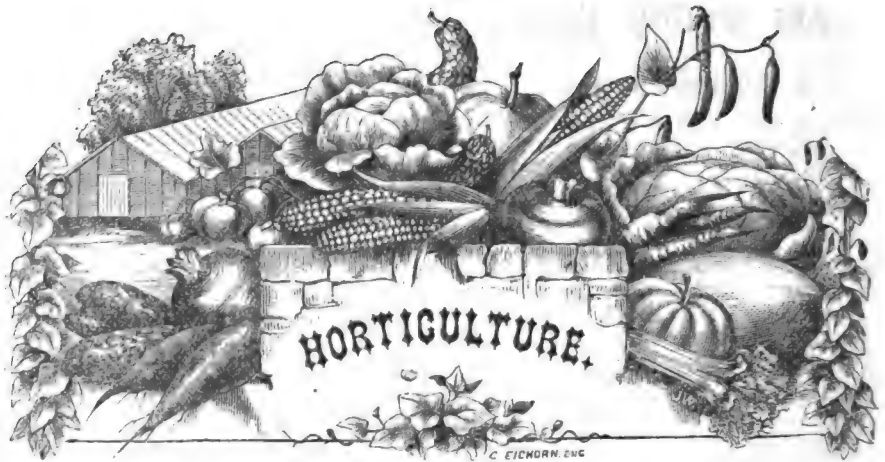
Fourth—The young chickens mature quickly, which, for those who raise spring chickens for the market, or table, is a great consideration.

Fifth—When grown, one has as much meat as two ordinary chickens.

I believe many of the failures of those beginning to raise chickens are caused by a lack of knowledge of a few general rules, and it may help some if I give from my experience a few:

1. Never set a hen in a box above the ground or floor of the chicken-house, if possible, as the eggs dry too fast and lose their vitality. If possible to set hens on the ground you will have much better success.
2. Never set more than fifteen eggs, no matter how large the hen. Some set only ten or twelve, but under ordinary fowls thirteen or fifteen will hatch as readily as a less number—though more are a waste.
3. Always be careful to mark the eggs set with the date of setting, as other hens often lay on the same nest with a setting hen, and when the brood is ready to come off, extra unhatched eggs are left in the nest, which you cannot account for, and do not know how to dispose of except by waste, not knowing when they were laid.
4. Keep a memoranda of all hens set, with dates when they should come off, that you may have coops and proper food prepared for them. Also take the young chicks from the hen as they dry, because sometimes they may run over their time a little, or hatch earlier.
5. Better let hens come off their nests for a short time for food and water, than to confine them and feed on the nest.

Two boards nailed together at one end, with slats of lath across in the form of an A, make an excellent coop.—*Prairie Farmer.*



The Vegetable Garden.

During the past three years we have given you, kind readers, such horticultural information as our imperfect experience could supply. We have not told you one tithe of what you want to know, but, however much we may have fallen short of the mark we aimed to hit, we can truthfully say, without arrogance, that we have told you many things which, if you have heeded them, have conduced to your comfort, health and profit.

We commence our journey with you for another year, and will try to add to what we have already told you such new information as we have picked up as we went along.

We wish that all our readers would resolve now, at the beginning of a new year, to have a well managed vegetable garden, and be no longer content with the unsightly "truck patch" whose presiding genius is a spindling collard. Prepare a piece of ground, well; put round it a neat, close fence; enrich it liberally, and when seed time comes, provide yourselves with an abundant supply of vegetables.

Do not expect to have good vegetables in proper season unless you labor in the preparation of the soil and in the collection and application of the food which plants need. You must enrich the ground. Grapes do not grow on thistles. No matter how poor your "garden spot" may be naturally, you can make it rich if you will take the pains. The cow and hog-pens, the chicken-house, the ash-hopper, the wash-tub, the slop-pail, will supply you with all the manure you need, and the very kind of manure you need. If you have stable manure, and wish to apply it to your garden, do so at

once, so that it may become assimilated with the soil when spring opens.

In the far South Irish potatoes and early corn may be planted toward the end of this month, and English peas, spinach, lettuce, radishes, beets, carrots and parsnips may be sown. In the more northern parts of our country this is more safely done in February. In our next number we propose to publish a carefully-prepared list of vegetables for a family garden, giving the names of the choicest varieties of each kind, together with the mode of sowing. We hope that our advice as to hot-beds, in the December number, has been followed by many of our friends, and that they are now ready to sow tomato, lettuce, and other seeds of tender plants, so as to secure early plants.

The Flower Garden.

Hyacinths, tulips, jonquils, crocuses, lilies, gladiolus, peonies, &c., may still be planted in the open ground, though it would have been better for early and strong blooming had they been set out in November or December. Roses may still be pruned, and it is a good time to transplant them. There can be no better time to transplant evergreens of every description.

Finish transplanting hardy perennials, and such biennials as hollyhocks, foxgloves and Canterbury bells. Promote the early blooming of flowering shrubs, such as the lagerstræmia, by severe pruning. Dahlias that have been left in the ground should be protected against injury from frost by throwing a little straw or trash over their roots. Finish the preparation of the flower beds; dress the bor-

ders, put the walks in order, and fork over and dress with cool manure the soil round the shrubs. Procure Vick's "Floral Guide," and select your flower seeds so that you will have them ready when seedtime comes.

The Orchard.

Continue to plant out all kinds of fruit trees and grape vines. Look well to the old peach and apple trees, and destroy the worms which, hidden at their roots, prey upon them and destroy their vitality. Now is a good time to prune grape vines, removing all dead wood. Plant out all kinds of fruit seeds, but not too deep. It is best to crack the peach stones before planting, taking care, of course, not to injure the kernel. Cuttings of fruit trees may now be made and transplanted, if they are not allowed to become too dry before they are put in the ground.

Roses.

The rose requires a deep, rich, loamy soil, unshaded or smothered by trees or shrubs; good drainage, careful waterings, if the season is dry and close, judicious pruning.

The soil should be well intermixed with thoroughly decayed manure; and during the heat of summer it should be mulched with straw manure, to keep the roots moist and cool, and encourage a strong growth.

All the wood which produced flowers last season should be cut clean out, or back to the strong, fresh growth of the past year; and these fresh shoots can also be pruned one-third or more of their length.

This may seem to the amateur gardener a terrible waste of material, but it will make the rose throw out stronger flowering shoots, and produce flowers of extra size and beauty. So spare not the knife! As early in the spring as is practicable, cut back the branches with a will.

Hybrid Perpetual Roses have been the fashion of late years; but they are not as free bloomers as the Bourbon and Hybrid China. Their name is also a misnomer, for, though they may bloom again in the autumn, they will not flower as profusely as in June, nor will their blossoms be as handsome, unless the shoots are trimmed back in July to within two or three eyes of the main stem.

The old fashioned Moss, Damask and Provence Roses of our childhood far excel these so-called Perpetuals in fragrance, and they are rapidly coming into favor again.

Christata, or the Crested Moss Rose, is one of the loveliest of its class. The plant from which all this species of roses is descended was discovered years ago, growing in the crevice of a wall at Friburg, Switzerland. There is a difference of opinion among florists

as to what particular species the *Christata* belongs, and it is thought by many to be more like the Provence Roses than the true Mosses, for, when fully developed, it resembles the old Cabbage or Provence species. Its buds are perfection! The calyx is divided into a fringe or mossy crest, clasping and half surmounting the rich pink petals, as they strive to unfold their many leaves. The moss is more abundant and longer than that on other Moss Roses, and the buds are very large. This variety requires a deep, rich, moist soil for its perfect development; and when thus grown, it will command greater admiration than any other rose.

Roses are easily propagated by cuttings, but the shoots should be old enough to be free from softness, yet not too woody or hard. It is best to cut off the shoots just below a joint, trimming off the leaf attached to it, and leaving two or three buds above it, with leaves on them; but when they are too luxuriant cut off a part, for if they wither the cutting will not strike root.

Sand is far better than loam for rooting cuttings; so fill up your tiny pots with it, and insert the cuttings close to the edge of the pot, keeping it thoroughly wet—for if the sand dries the tiny roots will die. Then sink the pots in a hot-bed made of manure, or in a pan of hot water, changing it as it cools.

Bottom heat is a necessity—without its aid there is little use in attempting to strike tender roses; and a glass shade, to retain the heat and moisture, is also needful. Another way to strike cuttings is to fill a large flower-pot half-full with a little rich loam and two or three of sand; then plant the cuttings close to the edge, about half an inch apart, and cover them with a pane of window-glass. Place the pan in a pot of hot water, in a window, and, if you change the water three or four times a day, you will have a good hot-bed for striking tender cuttings of all kinds. It will take from three to five weeks for delicate roses to become rooted, and they must be kept well watered all the time. In planting cuttings, the sand must be firmly pressed around the base, so that it is in the closest contact with it.

Our roses are often ruined by the slug and the green fly. A few days of neglect, and every bush will be shorn of its glory. But if air-slacked lime is scattered over the leaves while wet with morning dew it will usually prove an effectual remedy.

A pint of common soft soap, with a pint of fine salt added to ten gallons of warm water, syringed over the bushes, is also a good insect destroyer. No one can expect to cultivate flowers without trouble. So as soon as the green leaves appear we must begin our fight against their insect enemies.

Rose-bugs are routed by shaking the stems containing them over a dish of hot water, or by hand-picking and burning.

Soot is an excellent remedy for mildew; it must be dusted thickly over the plants while wet with dew, and in twenty-four hours

syringed off. It is also an excellent fertilizer to the soil. Wood-ashes can be applied in the same manner for both mildew and insects.

The Florists' Catalogues offer us many roses with high-sounding names, a few of which we select for notice. *Deroniensis* is an unsurpassed tea-rose, creamy white with a tinged center, and of most delicious odor. It is a delicate rose in northern latitudes, and must be carefully housed during cold weather, though at the south it will endure an ordinary winter without protection.

Marechal Niel is of an intense golden yellow, the finest known; its fragrance is unsurpassed; but, like the *Deroniensis*, it cannot endure the cold.

Madame Falcot is of a deep nankeen yellow, with a perfect bud. *Celine Forrestier* is paler and smaller, blossoming in clusters.

Fils Niphetos is pure white, with lemon center, and is not very hardy.

Pius the Ninth is the deepest, darkest rose that we possess. How perfectly its rich tints set off its more delicate sisters!

This exquisite pink, and model of symmetry, is *Comtesse Chabillard*; and next to it is the *Comte de Nanteuil*, a summer rose, sweet and bright, monthly in habit, and hardy in some latitudes.

Those rich, brilliant flowers are *Alfred Colomb*, exquisitely petaled; *Charles Lefebvre*, beautifully blended with crimson, purple and scarlet—its leaves as regular as those of a Camellia; *Eugene Appert*, deepest crimson, and *Madame Charles Wood*, claret crimson, among the largest roses grown.

Moss Roses add to the charms of a bouquet—such as *Princess Adelaide*; *Countess Murinais*, a pure white; *Lanier*, rosy crimson; *William Lobb*, purplish crimson; and *Christata*, the peerless.

The white "perpetuals," *Madame Vidot*, *Sophie Coquerelle*, and *Mrs. Rivers*, are lovely models of their species, and are more or less flesh-tinged at the center.—*Scribner's Monthly*.

CURCULIO ON PLUMS.—I have seen various methods for keeping these insects off plum trees, but none so simple, nor yet so effectual as the following: Soak corn-cobs in sweetened water until thoroughly saturated, then suspend them to the limbs of the trees a little while after blossoming, being sure to burn the cobs after the fruit ripens, as they will be found full of young insects. A good plan is to change the cobs every few weeks. My theory is this: that the insects deposit their eggs in the cobs in preference to doing so in the young plums. The first season I tried it upon one or two only, and in the summer was rewarded by a good crop of as fine plums as ever ripened, while those on the other trees fell off when about half-grown. Next spring found sweetened corn-cobs dangling from the limbs of all my plum trees, and the summer found them full of delicious fruit. I have never known it to fail, and I hope every one who has a plum tree will try it.—A. M. S., in *Germantown Telegraph*.

Household Department.

Domestic Receipts.

BY MRS. E. J. B.

HOW TO BOIL POTATOES.—In the first place, to cook potatoes to perfection they should never be peeled before they are cooked. In Ireland, where potato cooking has become a fine art, they are not only cooked, but served "with the jackets on." Let the potatoes be well washed, so as to remove every particle of dirt. Select them all of the same size, or nearly so. When put in the pot or saucepan cover them only with cold water. Too much water retards the cooking and injures the flavor. Half a gallon of water to a dozen good-sized potatoes is plenty. Add one large tablespoonful of salt. Boil quickly, and when the water has boiled withdraw the pot from the fire and allow the potatoes to simmer till done, which can be ascertained by prodding with a fork. When done pour off the water, remove the cover of the vessel and let them become thoroughly dry by the fire. Never cover a cooked potato. The steam softens them. Well cooked Irish potatoes are so rarely seen, the writer offers the foregoing recipe, with the assurance that if followed it will never fail.

PLUM PUDDING.—"Christmas comes but once a year, and when it comes it brings"—plum pudding, but not always or often well made plum pudding. We recommend the following directions to make a pudding for a large family: Take two pounds flour, two pounds fine sugar, one pound each of currants, stoned raisins and beef suet, three eggs, one pint milk, one-fourth pint French brandy, and a slice or two of citron or candied orange peel. Shred the suet as fine as possible, and mix well with it the flour, sugar and fruit. Then mix in the eggs, and finally the milk and brandy, until the whole makes a thick batter. When well mixed put in a well-buttered cloth, rolled compactly and tied tightly, and boil for seven or eight hours. Serve with slips of blanched sweet almonds stuck in the pudding to ornament it, and with burning brandy in the dish, or with brandy or wine sauce. For a small family the quantities of the ingredients may be reduced, preserving the above proportions.

MINCE-MEAT.—Take two pounds of raisins, stone and cut them in two or three pieces; three pounds of currants, well washed and picked; two pounds of lean beef and three

pounds of beef-suet, chopped as fine as possible; two pounds of sugar; two ounces each of citron, candied lemon peel and candied orange peel, cut into thin slices; one nutmeg grated; three or four apples nicely peeled, the cores extracted and cut up fine; the rind of two lemons chopped up, the strained juice of one lemon, and one-half pint of the finest French brandy. Mix all these ingredients together thoroughly, pouring in the brandy last. Pack close in a jar and cover so as to exclude the air. In a fortnight the mince-meat will be ready for use.

OYSTER SOUP.—Take a quart of fresh oysters, two quarts of rich mutton broth, two ounces of butter, two ounces of flour, salt, pepper and mace to suit the taste. Scald the oysters in their own liquor, then take about a pint of the broth and simmer with the oysters and liquor for about twenty minutes. Strain and add the rest of the broth, with the pepper, &c. Boil, and when boiling add the butter and flour, simmer for five minutes, and serve. The addition of half a pint of cream or good milk will make the soup very rich.

Clouted Cream.

The Devonshire cream, also known as "clotted" or "clouted" cream, is famous in England, and the butter made from it is considered the finest in the kingdom. A recent writer on dairy matters gives the following account of its manipulation, which may be of interest to our readers:

"As there is no peculiarity in the milk from which this fluid is extracted, it has frequently been a matter of surprise that the process has not been adopted in other places of the kingdom. A four-sided vessel is formed of zinc plates, twelve inches long, eight inches wide, and six inches deep, with a false bottom at one-half the depth. The only communication with the lower compartment is by the lip, through which it may be filled or emptied. Having first placed at the bottom of the upper compartment a plate of perforated zinc, the area of which is equal to that of the false bottom, a gallon (or any given quantity) of milk is poured (immediately when drawn from the cow) into it, and must remain there at rest for twelve hours; an equal quantity of boiling water must then be poured into the lower compartment, through the lip; it is then permitted to stand twelve hours more (*i. e.*, twenty-four hours altogether), when the cream will be found perfect, and of such consistence that the whole may be lifted off with the finger and thumb. It is, however, more effectually removed by gently raising the plate of perforated zinc from the bottom, by the ringed handles, by which means the whole of the cream is lifted up in a sheet, without re-mixing any

part with the milk below. With this apparatus a series of experiments have been instituted, and, as a mean of twelve successive ones, the following results were obtained: Four gallons of milk treated as above, produced, in twenty-four hours, four and a half pints of clotted cream, which, after churning only fifteen minutes, gave forty ounces of butter. Four gallons of milk, treated in the common mode in earthenware pans, and standing forty-eight hours, produced four pints of cream, which, after churning nineteen minutes, gave thirty-six ounces of butter. The increase in the quantity of cream, therefore, is twelve and a half per cent., and of butter upward of eleven per cent."

Curing Hams.

The following recipes are those according to which the hams that took the first and second premiums at a Maryland State Fair were cured:

1. Mix two and a half pounds of saltpeter finely powdered, one-half bushel fine salt, three pounds brown sugar, one-half gallon molasses. Rub the meat with the mixture; pack skin down. Turn over once a week, and add a little salt. After being down three or four weeks, take out, wash, and hang up two or three weeks until it is dry. Then smoke with hickory wood three or four weeks, then bag or pack away in a cool place—not a cellar—in chaff or hay.

2. The meat, after being cut out, must be rubbed, piece by piece, with very finely powdered saltpeter, on the flesh side, and where the leg is cut off, a tablespoonful (not heaped) to each ham, a dessert-spoonful to each shoulder, and about half that quantity to each middling and jowl; this must be rubbed in. Then salt it by packing a thin coating of salt on the flesh side of each piece, say one-half an inch thick; pack the pieces on a scaffolding, or on a floor with strips of plank laid a few inches apart all over it (that is, under the meat); the pieces must be placed skin side down, in the following order: First layer, hams; second, shoulders; third, jowls; fourth, middleings—take the spare-ribs out of the middleings. The meat must lie in this wise six weeks if the weather is mild, eight if cold—the brine being allowed to run freely.

HOW TO SAVE COAL IN OPEN GRATES.—The *Spectator* remarks that "The most practical suggestion yet made toward economy of coals seems to be the use of solid bottoms in ordinary fire-grates. It is asserted, and indeed proved, that in any fire-place not excessively small, a plate of iron placed upon the grate will halve the consumption of coal, reduce the smoke, and leave a cheerful, free-burning fire. Quite sufficient air enters through the bars, no poking is necessary, and the fire never goes out till the coal is consumed. There is no ash and no dust, every particle of fuel being consumed. Any householder can try this experiment, and reduce his coal bill, say, thirty per cent., at the cost of a shilling." This is not a new idea, but we believe it to be a good one.

Pepsine Wine in Feeding Infants.

A writer in the *Dublin Journal of Medical Science* makes the following suggestions with regard to the artificial feeding of infants:

Artificial feeding by bottle is a great improvement upon the old system of spoon-feeding, as the act of sucking stimulates the salivary glands and insures due insalivation, which is an important part of infantile digestion. With such an aid the stomach of most human infants is vigorous enough to fall into the way of digesting cow's milk, properly diluted, and mixed with sugar and cream to assimilate the proportions of its constituents to human milk; but besides the relative excess of caseine and albumen contained in cow's milk when compared with human, the coagulum of the latter is soft, flocculent, and not so thoroughly separated from the other elements of the fluid as the firm, hard curd of cow's milk is from the whey in which it floats.

When we reflect that the digestive organs of the human infant are found to digest human milk, and the force of its gastric juice is proportioned to the solution of its soft, flocculent coagulum, we can understand why the solvent power of its gastric juice is sometimes unequal to re-digesting the firm curd of cow's milk. When such is the case, acetous fermentation is quickly set up; offensive gases distend the stomach and taint the breath, vomiting and diarrhoea set in, and in process of time the little patient sinks into a miserable state of marasmus, and dies. The remedy for this state of things is simple, for although we cannot change the elementary composition of the milk we have to use, we can introduce into the infant's stomach a digestive power proportioned to the food it has to use—the organic principle of digestion taken from the stomach of the calf.

It is now many years since I first applied this simple theory to practice in the case of one of my own children, who, when about three or four months old, was reduced to a condition of marasmus by vomiting and diarrhoea due to imperfect digestion of cow's milk. I ordered him fifteen or twenty drops of pepsine wine, to be given immediately before or after each meal. Soon after commencing it he began to improve, and by degrees all bad symptoms vanished, and nutrition was quite restored.

Shortly after, a child born in England, and bottle-fed, was brought over to this country when about six months old; he also was suffering from infantile dyspepsia, and was pining away in a listless, apathetic state, quite indifferent to surrounding objects, and appearing as if he would lapse into idiocy from mal-nutrition of the nervous centers. I immediately ordered him pepsine wine, which produced such beneficial effects, that after it had been continued about twelve months, he had become a bright, intelligent, well-nourished child.

Since then I have never recommended a wet nurse, and have used pepsine wine largely in dispensary, hospital and private practice, and have seen many apparently hopeless cases recover under its use.

The Poetry of Dish-washing.

I wish every young girl, before she is twelve years old, could take a lesson in dish-washing of my landlady. I have lived at places which could by no means be recommended in this respect. The dishes there appeared to have been washed in a thin mucilage, and dried on a soiled stove cloth. I saw a table full of dishes gathered up in the dining-room one day, and washed there, as the kitchen was undergoing repairs. They were snatched up and thrown, pell mell, into a dish-pan of water, bits of vegetables, butter, egg and gravy all adhering to them. It would need nine waters to make such dishes decent to come on the table again. I did not stay in that boarding place any longer than I could help.

Amaryliss' mother manages very differently. The silver is all gathered up first in a basin, and Amaryliss herself washes it in warm soap-suds, and wipes it very dry on a soft towel, then lays it orderly in the silver basket, the forks and spoons each in their several compartments. The glass-ware is also taken out and washed by itself in clean water with a very little soap in it, then wiped on a napkin free from all lint. But the dishes are what I wished especially to speak of. Such orderly piles of cups and saucers, all set away snugly on the kitchen table. Each plate is scraped with an old, thin, flexible knife, that readily adapts itself to curved surfaces. Not a crumb or scrap is left on any of them. You would never gather enough grease for a pound of soap from Mrs. Denham's dish-pans, if you saved it ten years. Then the warm water is poured over the cups and saucers, and they are thoroughly washed and turned into a second pan of hot water to rinse before being wiped.

All this labor is done with the dispatch that always accompanies systematic work. And oh, what comfort it brings to the table; what a joy it is to handle such shining white dishes. There is a real poetry in washing dishes in this style, and in eating from them afterward. A smutty, sticky saucer, a glass with greasy finger-marks, a spoon with dark-stained bowl, oh, what an abomination in domestic life.—*Country Gentleman*.

THE GRAIN CROP OF THE PACIFIC SLOPE is reported as being unprecedented in the annals of that land of plentiful harvests. The wheat crop of Livermore and San Joaquin Valleys, California, is estimated at from twelve to fifteen million bushels, which have all been gathered and bagged, and are lying in heaps along the Central Pacific railroad awaiting transportation. One field in the Livermore Valley covers sixty-eight thousand acres, or over one hundred and six square miles, and has yielded forty bushels of first-class wheat to the acre. Within seven days the wheat yield of that large farm was standing stacked within sight of the railway, in the hempen sacks commonly used for sending grain to market, and the cost of the sacks for that farm alone was \$30,000.

The Southern Farm and Home.

MEMPHIS, TENN., JANUARY, 1872.

WM. M. BROWNE, - *Editor and Proprietor.*
BOYLE & CHAPMAN, - - - *Publishers.*

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

Death of Horace Greeley.

In every State of the Union the unexpected intelligence of the death of the greatest of American journalists has produced a profound sensation and universal regret.

By his own unaided efforts he rose from the obscurity of a New Hampshire farm-house to the highest prominence among the leading men of his generation. Although for many years actively engaged in the political contests of the time, and occupying for a portion of that time political offices, and although during the past year, as a candidate for the Presidency he played a conspicuous part upon the political stage, it was as editor of the *Tribune* that he won the remarkable power and influence which he exercised over the public mind, and it is his distinction as a journalist upon which his fame will permanently rest in the future. He was a profound and original thinker—a man of honest and independently-formed convictions. He always followed the course which he believed to be right without reference to the opinions of others, and irrespective of his popularity or his interests. When he was most wrong he believed he was most right. He was not a profound scholar, though he was an untiring student. He was not an elegant or polished writer. He was a bold, forcible and persistent exponent of his ideas. It was his originality and manifest honesty that constituted his influence. The greater portion of his life was devoted to the advocacy of the emancipation of the negro slaves. This was the ruling purpose of his existence, and though in its pursuit he was universally and justly regarded as the enemy of the peace and prosperity of the Southern States, there are few who will not confess the belief that his convictions were honest, however offensive may have been their expression. That he was mistaken

in his estimate of Southern character, and in his views of the capacity and intelligence of the negro, the events of the last months of his life must have conclusively proved. The race for whose freedom he had labored for upward of a quarter of a century, were the instruments by which his fondest aspirations were defeated, and those whom he had persistently maligned and deeply injured, were his most earnest supporters.

In private life Horace Greeley was generous, amiable and charitable. He was an earnest friend, and always ready to help the needy and succor the distressed.

While none could condemn more strongly than we do the political principles which he advocated, and the purposes which he pursued during the greater part of his public life, we are satisfied that he was honest. We dwell not on the wrongs that he has done or the errors of which he was guilty. We prefer to remember only his truthful, generous nature, his eminence as a journalist, and the example he has left of the power of self-help.

HON. J. M. SHAFFER, Secretary of the Iowa State Agricultural Society, has our thanks for a copy of the Society's Report for 1871.

OUR FRONTISPIECE.—This number of the *FARM AND HOME* is embellished by a portrait of General WADE HAMPTON, whose name and fame are so familiar and so dear to every Southern heart. Eminent alike as a citizen and as a soldier, he is admired and esteemed by all who know him for his intellectual ability, nobility of character, and kindness of heart.

Identified as he is with the agricultural interests of the South, and with that eminently Southern institution, the *CAROLINA LIFE INSURANCE COMPANY*, of which he is Vice-President and Director, we feel assured his portrait will be prized by every reader of the *FARM AND HOME*, by many of whom it will be recognized as the likeness of the great soldier who so often led them to victory.

THE COMMISSIONER OF AGRICULTURE has our thanks for a copy of his able Report for the year 1872.

CAPT. G. W. GIFT.—Among the many interesting papers from the pens of our valued contributors which are published in this number, we would call special attention to the admirable article on red clover, by our friend

Capt. Geo. W. Gift. Like everything he says or writes, it has force, directness of purpose, and practical wisdom. We entertain the hope that in future Capt. Gift will contribute frequently to our columns.

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWNE, Memphis, Tenn.

A VALUED COMPLIMENT.—Among the many kind expressions of good will and encouragement which we have recently received from subscribers, we particularly prize that which is contained in the subjoined letter, first, because the compliment to the FARM AND HOME comes from a lady who has been a constant reader for two years; and secondly, because her husband having yielded to her persuasion believes he did right, and thinks that other husbands ought to do likewise. We thank our friends very sincerely for the kind-hearted manner in which they have renewed their subscription, and assure them that if the monthly visits of our magazine contribute in any degree to "make things quite pleasant" in their home, and in other Southern homes, we shall feel that our highest purpose has been attained, and that our labor has been richly rewarded:

KINGSTON, December 12, 1872.

DEAR SIR—I have always desired to have peace in my family and live peaceably with my wife. For two years I have taken your paper, and my wife has been a constant reader of it. This year I leased my farm for five years, and sent my children off to school, so I told my wife we would not take the FARM AND HOME this year. From that time things were a little troublesome at home. Every few days I would hear, when I came home: "Well, —, this will be the last number of the FARM AND HOME." Then I would hear, "what is the price of turnips in town?" Fifty cents. "Well, I could sell four bushels of my turnips, and take the FARM AND HOME. (By the way, she raised a fine crop of turnips, by plowing her ground well and deep, sowing in drills and using about 400 pounds of the Stonewall fertilizer, per acre.) So I have been so tormented about how much of this thing and the other thing it would take to pay for the FARM AND HOME, that I have concluded to send you two dollars, and ask you to send my wife, Mrs. —, your paper for one year. Since I came

to this conclusion things are quite pleasant at home, and I expect more homes could be made pleasant by husbands taking your paper for their wives, and if they were to read and follow its advice more.

Yours truly,
J. S. H.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the FARM AND HOME and any of those papers at the subjoined reduced rates:

FARM AND HOME and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
FARM AND HOME and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
FARM AND HOME and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
FARM AND HOME and <i>Columbus (Miss.) Democrat</i>	\$3 00

In addition to these we can furnish the FARM AND HOME and any one of the following valuable periodicals at the following prices:

FARM AND HOME and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
FARM AND HOME and <i>Southern Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Harper's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Appleton's Journal</i> , per annum.....	\$5 00
FARM AND HOME and <i>Hearth and Home</i> , per annum.....	\$3 00

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

VEGETABLE AND FLOWER SEEDS.—Mr. J. H. Gregory, of Marblehead, Mass., is well known as one of the few leading seed grocers in this country. He was the original introducer of the Hubbard squash and many other of our new and valuable vegetables. All seeds from him are warranted fresh and reliable. His advertisements will be found in this number, and we invite attention to them. His illustrated catalogue for 1873 (now ready) will be sent free to all applicants.

THE STATE FEMALE COLLEGE.—We are glad to learn that this excellent institution is in a most prosperous condition, numbering nearly two hundred pupils. Presided over by that eminent scholar, Rev. Dr. Collins, assisted by a numerous faculty, each member of which is distinguished in the particular branch of education which he directs, this College affords the best educational advantages to be found in this section of the country. Health, parental care, sound religious instruction and thorough education are combined in the State Female College.

Answers to Correspondents.

FULL-BLOOD OR GRADE.—H. J. M., near Houston, Texas, has a number of fine grade sheep, and wishes to improve his flock. He wants to know whether it will be more profitable to buy a full-blooded Merino ram to run with his grade ewes, or some full-blooded ewes.

By all means buy the best-bred and the best-shaped ram you can find. Improved stock can never be had from a grade ram. The bad streak is certain to show itself in the offspring. The full-blooded ram will cost a great deal more than the finest grade, and placed side by side the latter might appear to be the finer animal; but for breeding, if improvement be the object, the full-blood is worth all the money he costs and the grade is really worthless.

LUCERNE.—Z. E. D., Colfax co., Miss., asks how many pounds of lucerne seed should be sown to an acre, and whether broadcast or drill-sowing is to be preferred.

From ten to twelve pounds of seed are ample for an acre. If the ground be perfectly free from weeds or grass, broadcast sowing may be allowable because it is least expensive, but if, as is generally the case, the land is not clean, drill-sowing is preferable, leaving the drills sufficiently far apart to run a small cultivator between them.

ARTIFICIAL HATCHING AND RAISING OF CHICKENS.—"Chicken Culturist," Hanover co., Va., wants to know if any method of hatching and raising chickens artificially has been invented, and if so, what it is.

There are many ways of hatching eggs by artificial means, the principle being to subject the eggs continually to the same heat as would be created if they were covered by a hen. But when the chickens are hatched the difficulty begins. No artificial means of rearing them having yet been discovered. Hence, the

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"patent incubators," are really practically useless.

CRUSHING BONES.—A. L., Harris co., Ga., asks whether the ordinary horse-power of a gin is sufficient to run a small bone-mill to crush bones for manure.

No. The smallest Bogardus mill we know of, requires a five horse-power, at least, to run it.

LAND PLASTER OR GYPSUM.—M., Bullock co., Ala., asks whether land plaster or gypsum loses any of its fertilizing properties by age.

If the plaster has been kept dry, age does not effect it at all. Old plaster is just as good as that which is fresh from the mill.

COTSWOLD RAM.—B. W. B., White co., Ga., asks what is the price charged by stock-raisers for a good Cotswold ram of pure-blood.

We do not know accurately, but we believe the price is from \$75 to \$125, according to size and shape. Our correspondent should be careful, if he wants a really full-blooded animal, to purchase only from a breeder of established reputation, who will not sell a grade and charge a thoroughbred price.

HOW MUCH PLASTER TO TOP-DRESS AN ACRE OF CLOVER.—F. C. P., Edgefield, S. C., asks how much ground plaster should be used per acre to top-dress clover.

Three bushels per acre, well and evenly distributed, are quite sufficient.

LEACHED AND UNLEACHED ASHES.—"A young farmer," Lowndes co., Miss., asks whether leached ashes are as good for top-dressing wheat as unleached.

No. Unleached are worth twice as much as leached ashes; but the latter make a very good top-dressing for wheat or any other small grain.

KEEPING FOWL.—A lady subscriber, Ouachita co., Ark., asks what is the amount of corn required to feed one hundred fowl for a year.

If the fowls are allowed to run at large where they have grass and insects to feed on, it is calculated that a bushel of corn per fowl is a sufficient allowance for a year.

EARLY PEARS.—J. G. Y., near Jackson, Miss., asks what early standard pear will do best and bear earliest in the South.

No early pear for our country does so well, is so early and bears as abundantly as the *Doyenne d'Ete*. It will ripen at the end of May or beginning of June, and is not excelled in quality of fruit, healthy growth or soundness. In our opinion it is fully equal to the Bartlett or the *Duchesse d'Angouleme*, and has the advantage over them of being fully five weeks earlier.

OIL MILL.—A. M. W., Plaquemine, La., wants to know the price of an oil mill to express the oil out of the seed on two or three large plantations, and make the cake for use on the places.

We cannot answer our correspondent with sufficient precision to suit his purpose. But we will inquire and give him accurate figures in our next. His object is one we heartily approve. The sale and exportation of cotton seed are ruinous to land, and wholly inconsistent with good farming.

MANAGEMENT OF STOCK.—W. L., Gonzales, Texas, asks, what are the best works on the management and treatment of diseases of horses, cattle and sheep.

"Every Horse-owners' Cyclopaedia," published by Hummel, New Orleans; McClure's "Stable Guide," and "Youatt on the Horse," new edition, published by Lee & Shepard; "Allen's American Cattle," and Randall's "Sheep Husbandry," are the best books we know on the subjects of which they treat. No manager of a stock farm should be without them.

DR. BALL'S PATENT IVORY EYE-CUPS.—We have received several letters within a recent period inquiring about Dr. J. Ball's "Patent Ivory Eye-Cups," which are advertised in the FARM AND HOME, and asking for our opinion as to their value. We cannot speak from personal experience, but we have heard from others who have used them that they are extremely beneficial in curing defective vision and in enabling old people particularly to dispense with the aid of spectacles. We believe Dr. Ball to be a conscientious man and quite incapable of practising "quack doctor tricks to gull the public," as one of our correspondents says he fears.

KEEP THE SOIL MELLOW.—A mellow soil is capable of absorbing in twelve hours, when exposed to a dry atmosphere, an amount of water equal to two per cent. of its weight. If any argument was needed to keep the soil mellow, here is a most powerful one to convince us. For this property possessed by a mellow soil is one that in a dry season is able to give it the power of maturing a crop, when a hardened surface would be unable to do so. A surface that is impenetrable to the atmosphere, of course, could not absorb any of the moisture with which the atmosphere is charged. But when rendered free from lumps by repeated plowings and harrowings, each change of temperature causes a circulation of air throughout the mass of soil, which is free then to absorb all the moisture coming in contact with it until it is saturated.—*Journal of Chemistry.*

Literary Department.



EDITOR'S BOOK TABLE.

PRESENT ISSUES, OR FACTS OBSERVABLE IN THE CONSCIOUSNESS OF THE AGE. By Rev. Robert Withers Memminger, author of "What is Religion," 12 mo. pp. 255. (Claxton, Remsen & Haffelfinger, Phila.) We are indebted to a much esteemed friend for a copy of this remarkable book, combining, as it does, closeness and keenness of observation, logical force, analytical power, and profound and far-reaching thought, with simple piety, religious devotion and the spirit of brotherly love. The object of the book is to expose the various agencies now at work in what is called society, to hold them up individually to inspection, describe their character and tendencies, and thus "bring them out clearly before the consciousness" of mankind, while at the same time he lays bare, in all their hideousness, the various errors by which society is beset, showing wherein their falsity exists, and contrasting them with the immutable truths which, though we may seem to have lost sight of them for the time, must ultimately prevail, because they are of God. It is quite impossible in the space which we can devote to it, to give any adequate idea of the merits of this book. It must be studied to be understood and appreciated. Its perusal would be of inestimable benefit to those who are allowing their minds to be influenced by the newfangled and heretical theories of the so-called modern scientists, and will be edifying and useful to all who take an interest in the advancement of Christ's kingdom upon earth.

CONTRIBUTIONS TO MOLECULAR PHYSICS IN THE DOMAIN OF RADIANT HEAT. By John Tyndall, L. L. D., F. R. S. 8 vo. pp. 446. Illustrated. (D. Appleton & Co.) This volume is composed of a series of memoirs published in the Philosophical Transactions of the Royal Society, showing the absorption and radiation of heat by gases and vapors, and the physical connection of radiation, absorption and conduction, the relation of radiant heat to aqueous vapor, the passage of radiant heat through dry and humid air, the absorption and radiation of heat by gaseous and liquid matter, the influence of color and mechanical condition of radiant heat, the radiation through the earth's atmosphere, the polarization of light, and other kindred subjects. Each of these abstruse subjects is treated with masterly skill, exhibiting the profound research and life-long study with

which the distinguished author has formed his conclusions, and the book now ranks with the great works on natural science which have been left by Davy and Faraday as monuments of their brilliant services in the diffusion of scientific knowledge.

MAJOR JONES' COURTSHIP. By W. T. Thompson—with Illustrations by Cary—12 mo. pp. 285. (D. Appleton & Co.) It is many years—we will not say how many—since we read with infinite amusement the inimitable letters of Major Jones, of Pineville, to his friend, Mr. Thompson. As sketches of the manners and habits of the *cracker* class to which "Major Jones," "Cousin Pete" and "Miss Stallins" belonged, they are unsurpassed, and only equalled by Judge Longstreet's "Georgia Scenes." We felt like welcoming an old friend of whom we had not heard for years, when we received from the publishers the handsomely printed and cleverly illustrated copy of the new edition, which they were kind enough to send us. We laughed as heartily at the descriptions of the militia muster, of the Major's arrest at the instance of Cousin Pete, for having "convulsed the delicate systems and contorted the lovely faces" of "all the young ladies of Augusta;" and of how Miss Stallins "made out to get a teaspoonful of sut tea in the baby's mouth, hot enough to scald its life out," as we did when we read them first. We hope that the talented author, Mr. W. T. Thompson, editor of the *Savannah News*, will reap an abundant profit from this edition of his work, and that all who appreciate humor, wit, satire and keen perception of the grotesque and laughable, will make haste to buy a copy of "Major Jones' Courtship."

A WOMAN'S VENGEANCE. A Novel. By James Payn. (Harper & Brothers.) This is a capital story, well conceived, and well told, full of interest, and often marked by great power. The description of the shipwreck is admirable, and the way that Jack Adair—a remarkably well drawn character—baffles the schemes of Allardyce and Paul Jones, is really charming. Mr. Payn's previous novels, "Carlyon's Year," "Won, not Wooded," "Gwendoline's Harvest," "Bred in the Bone," &c., are deservedly popular, but we think he has excelled himself in "Woman's Vengeance."

FOR THE KING, by Charles Gibbon, (Harper & Brothers,) is an historical novel of the time of that luckless Prince, Charles Edward the Pretender, and tells of the trials and troubles of a young and lovely woman, who is the daughter of a prominent Scotch adherent of the Pretender, and the wife of an officer in the service of the Hanoverian King. The story gives a vivid and truthful picture of the fruitless devotion of the Scotch people to "bonnie Prince Charlie," and of the exciting incidents of that stirring time.

A GIRL'S ROMANCE AND OTHER TALES, by F. W. Robinson, (Harper & Brothers,) constitute No. 383 of Harper's "Library of Select Novels," and consists of a number of short and well-written stories, all of which are very

readable, while none of them have any marked merit.

BESSIE: A Novel, by Julia Kavanagh. (D. Appleton & Co.) There are few modern writers of fiction whose works are more admired and esteemed than Julia Kavanagh's. She has written a great deal, and while she cannot be said to rank with George Elliott or Miss Muloch, she will certainly take place immediately below them, and very far above the majority of female novelists. The work before us is fully equal to her best, and this will be considered high praise by those who have read and been delighted by "Nathalie," "Silvia" and "Madelaine."

JUVENILE BOOKS. Lee and Shepard, of Boston, have sent us a number of beautiful story books, very prettily written and well adapted to amuse and interest children. They consist of the "Little Canary Series"—four vols. illustrated—by Mrs. M. A. Osgood, and "Dick Travers Abroad"—four vols. illustrated—by Miss A. F. Samuels, all exquisitely bound in cloth and gold and done up in neat cases. We have also received from the same publishers, "The Children of Amity Court," by Louise M. Thurston, a gracefully written story, and one of a series by the same author, called the Charley Roberts' Series." As Christmas presents for children these little books would be exceedingly acceptable.

THE LONDON QUARTERLY REVIEW, for October, (Leonard Scott Publishing Co.'s reprint,) is one of the most interesting numbers of this able periodical that we have read for some time. The critical review of the "Despatches, Correspondence and Memoranda of Field Marshal Arthur, Duke of Wellington," is a very able paper, and among other things gives full particulars of the duel between the Duke and the Earl of Winchelsea, which grew out of the public excitement caused by the Catholic Emancipation Bill. The articles on "The Completion of St. Paul's," and "The Journal of a French Diplomatist in Italy," are very readable, but the best and most interesting paper in the number is, that on "The Position of Parties," and that part of it which relates to the Geneva Arbitration of the Alabama Claims is especially able. It is a just and severe condemnation of the "ignorant decision" by "a tribunal of foreign jurists, who neither understood the language in which the counsel addressed them, nor the laws of the country on which they were called to pass a judgment." It exposes what it politely terms the "baseless assertion" of Mr. Charles Francis Adams, who stated that the English Government had the power to extort from British subjects information as to the fitting out of the Confederate Cruisers, when he knew full well that in Great Britain, where freedom is a live reality and not a bald mockery, arbitrary arrests, sweat-boxes, and other forms of torture used for the purpose of "extorting unwilling testimony," are, thank God, unknown, and, as the writer with justifiable pride remarks, are powers which the Sovereign has not and will

never have while the freedom of England lasts. "It is easy to see," the writer concludes, "that the old code of national honor no longer guides our statesmen."

"TO-DAY." We extend a cordial welcome to a new candidate for distinction in the field of magazine literature. TO-DAY, published weekly, in Philadelphia, by Maclean, Stoddart & Co., and edited by Dio Lewis. In form and size it resembles Appleton's Journal. It is well-printed on good paper with a handsome cover, and each weekly number is filled with interesting and amusing stories, poetry, &c. Terms \$2 50 per annum.

APPLETON'S JOURNAL continues its weekly visits with such regularity as the postal authorities will permit. The numbers that are allowed to reach us are brimful of healthful and entertaining literature. It is an excellent magazine.

THE SOUTHERN MAGAZINE for December has the following contents, among which the papers on "The Second Empire of Germany," "Study of the Modern Languages" and "About Authors," have the most merit: A Lear of the Steppe, The Ghost at Mansfield, Cuba, A Dios! Seeking Dixie, The Second Empire of Germany, Donna Margherita, Study of Modern Languages, My First Christmas in California, Letters from Ancient Rome, A Handful of Legends, A Story of Nine Travelers, Chaps. XXI—XXII, About Authors, Reviews, The Green Table.

BLACKWOOD'S MAGAZINE for November has the following table of contents: The Parisians, The Shores of Biscay, On a Resurrectionist, A True Reformer, Montalembert, LaBruyere, The End of the Banquet, Our Autumn Manceuvres.

LIPPINCOTT'S MAGAZINE for January commences a new volume, and is an excellent number, full of entertaining and instructive matter, and beautifully illustrated. The following is the table of contents:

Iron Bridges and their construction, by Edward Howland; Searching for the Quinine Plant in Peru; Probationer Leonhard, by Caroline Chesebro'; The Irish Capital, by Reginald Wynford; The Maestro's Confession, by Margaret J. Preston; Monsieur Fournier's Experiment, by Cornelius Dewees; A Visit to "the King of Aurora," by Theodore Kirschoff; Grey Eyes, by Ella Williams Thompson; Reminiscences of Florence, by Marie Howland; The Southern Planter, by Will Wallace Harney; My Charge on the Life-Guards, by Charles L. Norton; Babes in the Wood, by Edward Fawcett; Painting and Painter; Our Monthly Gossip; Literature of the Day.

HARPER'S MAGAZINE for January ably sustains the high reputation which this periodical has won in the front rank of Magazine Literature. It contains nearly one hundred engravings, admirably illustrating the various papers of high merit with which it is filled. The contents are as follows:

Locomotion, Past and Present, by S. S. Conant; Outcast, by Lewis Kingsley; The Old

Romans at Home, by Benson J. Lossing; Priscilla, by Nelly M. Hutchinson; The Sailor's Snug Harbor, by Louis Bagger; Sonnet, by Paul H. Hayne; The British Museum and its Reading-Room, by George M. Towle; No. 289, A Vision, by Mrs. Frank M'Carthy; Old Kensington, by Miss Thackeray; Christmas Carol; Where is the Child, by Mrs. Zadel B. Buddington; Christmas Throughout Christendom, by O. M. Spencer; A Simpleton, by Charles Reade; Recollections of an Old Stager; The Walking Boy, by Clara F. Guernsey; The Christmas Gift, by Mrs. M. D. Brine; The New Magdalen, by Wilkie Collins. Besides the above, the "Easy Chair," "Drawer," and "Records" are more than usually full and interesting.

ORANGE JUDD'S periodicals, the AMERICAN AGRICULTURIST and THE HEARTH AND HOME maintain their well deserved reputation—the one as one of the best and most reliable agricultural papers, and the other as one of the most entertaining and instructive family journals on the continent.

Insurance Department.

"Shall I Permit my Policy to Lapse?"

This is a solemn question which those who have insured their lives for the benefit of their families should ask themselves, and consider well before they allow ill-grounded dissatisfaction, disappointed hope of exorbitant dividends, or the dishonest counsel of agents of rival companies to persuade them to forfeit their policies.

The subjoined views upon this subject are so well considered, so forcible and so fully meet all the points of the case, that we copy them from an exchange, in the hope that our readers who are insured will give them that attentive perusal which they deserve:

WHY FORFEIT YOUR POLICY, OR PERMIT IT TO LAPSE?

Have you failed to find what you demand, or had a right to demand, when you took out a life policy? If your company is meeting its liabilities, protecting the interests of the assured by judicious enterprise and proper economy, you have no just ground for complaint, you have protection to the amount of your policy, and this is a full equivalent for your outlay.

DID THE INSANE HOPE

of making a speedy fortune induce you to invest premiums in a life policy, or did the hope of participating in the distribution of fabulous dividends induce you to assure? Then you were deceived, either by partial or insufficient knowledge of the true intent of life assurance, and the basis of the system, or you were misled by the thoughtless assertion of incautious and imprudent agents. You do not invest in life

premiums as you would in stocks—nor are you gambling when you take out your policy. Nothing is more uncertain than the life of a single person, nothing more certain than the average life of thousands.

The company guarantees protection; that is what you desired, and that you have received; it is less than you should rationally demand? Had you died within a few years, the profits on your investments would have been enormous. It will take many years of careful saving for you to accumulate as much capital as your premiums immediately create.

IF YOU RETIRE,

you simply get the surplus over the cost of carrying the risk for the years you were insured. *No company can do better.* If more is promised, you have just grounds to doubt the management of the company. If more is *paid*, then rest assured the company is endeavoring to retain your good will by damaging, if not absolutely jeopardizing the interests of all other policy holders—sacrificing the future for a present and short-lived popularity.

IF YOU ARE SATISFIED

that your policy is with a company managed by an honorable board of directors and competent officers; that it conducts its business upon *approved and thoroughly* tested plans of assurance, then you have every guarantee that your policy will be paid when it becomes a claim. This is far more important to you than small or large paid-up, or surrender values.

INDEED, THIS IS ALL THAT IS ABSOLUTELY IMPORTANT TO YOU AS A POLICY HOLDER.

In every company, each year presents a different result. Sometimes losses and expenses are less than expectation, some over; *generally*, the conservatism of actual calculations is so prudent that expenses are less. This reduced expense of course is to the advantage of the policy holders; at the same time only a superficial view of the system of Life Insurance would urge that paid-up values should be proportionately increased during these years of diminishing expenditure.

In the long run, *mortality* will about equal expectation as tabulated, and since certain liabilities, maturing in the future, are accruing on *every policy*, it would be obviously unwise and ruinous to presume upon the results of the most favorable years, and apportion surrender values or paid-up policies or dividends without proper reference to the great law of *average*, which is the foundation-stone of life underwriting.

YOU PROPOSE TO CHANGE YOUR COMPANY

because you are promised *larger* dividends by the agent of a rival company. Will the company thus represented *guarantee* in its policy, or in any written contract, that such will be the fact? If the company can positively specify any dividend in advance, why not give you the benefit of this dividend when you pay your premiums? There is palpable absurdity and treachery in such promises, since it is due to this very difficulty and impossibility of know-

ing in advance what the divisible surplus will be at the end of a year, that makes it necessary for the company to charge what is safe, to-wit,

A PREMIUM SUFFICIENTLY LARGE

to meet every contingency, and place your ASSURANCE ABOVE PERADVENTURE. A large divisible surplus is not less valuable to the company than the policy holder.

Perhaps the company you propose to enter charges

SMALLER PREMIUMS.

If such is the case, it will be of the utmost importance for you to consider by what *authority*—gained from extended and unimpeachable sources—can any company venture to reduce the present rates?

You must likewise consider that your advanced age will, perhaps, even with reduced rates prove the change as burdensome pecuniarily, and attended by a loss of that security which attaches to the *well-tested* systems. THERE IS NO CERTAIN ASSURANCE IF THERE IS DOUBT. Your change in company will in all probability benefit one person, namely, the agent.

The Effect of Marriage on Mortality.

The Registrar-General of Scotland, a few years back, demonstrated very clearly the salutary effect of marriage on longevity, as shown by the returns, and recently we have some fresh evidence in that direction in a paper read by M. Bertillon before the Academy of Medicine in Paris. The statistics employed by the author were those of France, Holland and Belgium, and conclusively proved that the conjugal state has a decided advantage over the celibate. According to M. Bertillon, between the ages of 20 and 35, out of 1000 married men there are 6 deaths; out of 1000 bachelors 10 deaths, and 1000 widowers 22 deaths. Between 30 and 35 the deaths in the same number are: Married men, 7; bachelors, 11; widowers, 17½. Between 35 and 40 years of age the mortality per 1000 is: Married men, 7½; bachelors, 13; and widowers, 17½. Continuing these calculations through different series of years, the advantage on the score of longevity is always on the side of the married man. This advantage is not apparent in the case of females until the age of 30 is reached. In France, under 25, and in Paris under 20, marriage is unfavorable to the sex. From 15 to 20, the deaths in 1000 unmarried females is over 7½, and among married females between these ages the mortality is over 11½. From 20 to 25, the mortality among girls is nearly 8½ per 1000; that of wives of the same age nearly 10. Above this age the advantage is on the side of married females, and from 50 to 55 the difference is more marked. Within those years the married women furnish from 15 to 16 deaths per 1000, while the mortality of the single women and widows furnish 26 or 27 deaths. These facts are interesting when viewed from a life-insurance standpoint, as tending to show the effect of marriage on longevity, both in the case of males and females.

Song of the Mystic.

BY FATHER RYAN.

I walk down the Valley of Silence—
Down the dim voiceless Valley—alone;
And I hear not the fall of a footstep
Around me—save God's and my own;
And the hush of my heart is as holy
As hovers when angels have flown.

Long ago—I was weary of voices
Whose music my heart could not win;
Long ago—I was weary of noises
That fretted my soul with their din;
Long ago—I was weary of places
Where I met but the Human—and Sin.

I walked thro' the world with the worldly;
I craved what the world never gave;
And I said: "In the world, each Ideal
That shines like a star on life's wave,
Is tossed on the shores of the Real,
And sleeps like a dream in the grave."

And still did I pite for the Perfect,
And still found the False with the True;
I sought 'mid the Human for Heaven,
But I caught a mere glimpse of its Blue,
And I wept when the clouds of Mortal
Vailed even the glimpse from my view.

And I toiled on, heart-tired of Human;
And I moaned 'mid the masses of men;
Till I knelt long at an Altar,
And heard a voice call me—since then
I walked down the Valley of Silence
That lies far beyond mortal ken.

Do you ask what I found in the Valley?
'Tis my trysting-place with the Divine;
And I fell at the feet of the Holy,
And above me a voice said: "Be Mine,"
And then rose from the depths of my spirit
An echo—"My heart shall be Thine."

Do you ask how I live in the Valley?
I weep—and I dream—and I pray—
But my tears are as sweet as the dewdrops
That fall on the roses of May;
And my pray'r like a perfume from censors,
Ascendeth to God night and day.

In the hush of the Valley of Silence
I dream all the songs that I sing;
And the music floats down the dim Valley
Till each finds a word for a wing,
That to men, like the Dove of the Deluge,
The message of Peace they may bring.

But far on the deep there are billows
That never shall break on the beach;
And I have heard songs in the silence
That never shall float into speech;
And I had dreams in the Valley
Too lofty for language to reach.

Do you ask me the place of the Valley,
Ye hearts that are narrowed by care?
It lieth far away between mountains,
And God and his angels are there;
And one is the dark mount of Sorrow,
And one—the bright mountain of Prayer.

COLONEL CLIVE'S WIFE.

[CONCLUDED.]

When at last they arrived, and the steamer, after two hours of rocking and pitching to and fro, came to a sudden stand-still in Calais Harbor, Tom's poor father picked himself up, and came to thank Harold for his care of the boy. But Harold only nodded at him over the child's head, and carried Tom, still sleeping, up the companion on to the deck, and laid him in his little carriage.

There he left him, and he never saw him again; but the touch of those clinging arms about his neck had been very sweet to him, and had done his aching heart more good than a whole week of wordly distractions could have done.

"How long before the train starts for Paris?" Colonel Clive asked of a railway official standing by.

"Une bonne demi-heure, monsieur." (Rather more than half an hour), was the answer he received.

He was not hungry; but he felt faint and wearied. Carrying little Tom up those steep stairs had tired him more than he could have believed possible. So he walked up to the neat-looking young French woman who was officiating behind the counter, and asked for a glass of cognac and a biscuit. As he did so, he heard some one on his left-hand side make a request, in a low voice, and in very fair English-French, for a cup of hot coffee.

"Madame" smiled, and promised prompt attention to both customers, and then went away to execute the orders.

The very moment her back was turned a hand was laid on Harold's arm, and the same voice, speaking in English, now said:

"I should be glad to speak to you, Colonel Clive, if you could spare me a few minutes."

He turned quickly round, and saw that it was the lady in the red hood, and that the lady in the red hood was—Laura!

Laura's very self, and not a mocking apparition, as he had been tempted to think at first. His heart gave one great bound, and then it seemed of a sudden to stand quite still, so utterly astounded was he to see her at such a time and in such a place.

But he made no loud exclamations.

"Laura! you here?" he said, with a sort of gasp.

"Hush! don't say anything more; don't take any notice. How all these people do stare!" she said, in a hurried whisper, and turning away her head. "Follow me presently on to the platform. The train is not to start for nearly an hour, and there is not a soul there. I must speak to you, Harold."

She slipped quietly away from his side, was lost for a moment among the crowd of other passengers, and then passed through the glass doors of the waiting-room on to the platform beyond.

Harold stood some few seconds just where she had left him, wondering whether it was all a dream. But he was singularly calm, consid-

ering that his heart was beginning to beat with a wild hope that he dared not stop to analyze. He swallowed down the little glass of cognac which was handed to him, for he had need of some such stimulant, paid for it, and then slowly walked away, and followed Laura on to the platform, as she had bidden him do.

The train was already in waiting which was to bear the English mails and passengers to Paris; but there seemed no one about, except that at the extreme left, under the last lamp-post, stood the lady in the red hood.

Harold went straight up to her, and without even holding out his hand, said, in a voice which sounded strangely stern,

"Laura! what in the world has brought you here?"

It was the old Laura Sartoris who looked up at him then—the Laura of the dancing eyes and sunny smiles; the bright, loving Laura who had stolen his heart away from him years and years before.

"The Southeastern Railway and her Majesty's steamer '*Sarmphire*, the best boat on the station,'" she said, giving him one of her old saucy smiles.

Still there was no unbending on his part.

"Do they know at home that you are here?"

"Edward doesn't. I sent him to town to get him out of the way. Rosa aided and abetted me in my wickedness."

"She never let you come alone?"

"No, Phœbe is with me—in the body at least; but she has been so woefully seasick for the last two hours that I believe in spirit she is still tossing up and down in the cabin of the steamer. One of the sailors had almost to carry her on shore, and I left her just now sitting by the waiting-room fire, utterly oblivious of all things in heaven and earth."

But she could not bring a smile to his lips even yet.

"Now, Laura, tell me what this all means," he said, in the same stern tone.

She clasped both her hands about his arm, and her voice trembled for the first time as she made answer:

"It means this, Harold—that either you must go back to England with me, or I am going on to Paris with you, for I never mean to leave you again."

"Does it mean anything more than that, Laura?" he asked, in a low, pleading voice. He was shaking like a man who had the ague now, but he could not bring himself to put the question in a plainer form, as he had done that time in the Aberdeen prison. Could it be that the cup of happiness, which once more seemed so near to his lips, was to be dashed away again, as it had been that night? No, not this time. She hid her blushing face upon his arm (she could not have reached his shoulder if she had tried), and then came the whispered words which his very soul had longed to hear:

"Yes, Harold, it does mean something more than that. It means that your wife has come to her senses at last, and has found out that she loves you with her whole heart."

"My own! my darling!"

It was all he could say—the strong, tender heart of the man, which had borne him so bravely through all till now, gave way at last. The station and everything in it began to swim round and round before his misty eyes, and something seemed to come up in his throat and choke him. But he had manliness enough left to take her in his arms, and hold her in such a close embrace that she could scarcely breathe.

"And how did my wife come to make this wonderful discovery?" he faltered out at last.

A voice came from somewhere among the folds of his fur coat: "Don't hug me to death, you dear old bear, and I'll tell you if I can."

"Stop a minute!" and Harold Clive gave a little, low, happy laugh, such as no one who knew him had heard him give for years before. "Come out of that, little one; I want to kiss you first."

But the little one did not seem disposed to come "out of that." She only clung the closer to his arm; so he took her blushing face into his hands, and kissed her on the eyes and cheeks and lips, till she fairly cried for mercy.

"Now, tell me how it was."

"There is not much to tell," she answered, gasping for breath, "except that I must have been blind, and deaf, and dumb, and mad, too, I think, when you were with me this morning. I forgot everything—forgot the locket which I had had ready for you for a week. I let you go, knowing all the while that I should be miserable while you were away; and yet I had not the courage or the wisdom to stop you, as I should have done. But when I came to read your dear letter afterward, then I thought my heart would break. It would have broken, I believe, if I had not thought of this. I could not write to you, and so, you see, I came."

"Brave little girl!" he murmured, stroking her hair—for the red hood had fallen back—"how did you manage it? Tell me."

"Well, there was no time to lose. The first thing was to get rid of Edward; and Rosa helped me, as I said. Phœbe packed just a very few things in a carpet-bag (you will have to buy me some new dresses, sir, the moment we get to Paris), and then she and I came up by an evening train to London. I meant to have been at Charing-Cross in good time, but our cab broke down in going from station to station, and we only arrived just before the train started. I should never have known you were there if I had not seen Edward and Brown speaking to you at the carriage door. I was so frightened of being seen, not by Edward, dear old blind thing, but I thought your sharp eyes would find me out; however, you were busy talking, so I slipped by. And then again at Dover, when I made that false step in going on the boat, it gave me such a turn. I thought it was all over with me; if I had fallen, you must have found me out, for I knew you were close behind. I felt somehow that you were there. How awfully rude you must have thought me, Harold, never to thank you for saving me!"

"Yes, very rude," he answered, dryly. "I took you for a delicate old lady, and thought the roll of the vessel was too much for you, you darted off in such a hurry to the cabin."

"Yes, into the cabin I went, as you say; and there I lay all the way over. I was not ill, but I could not move hand or foot. I could use my eyes, though, and to some purpose too. From where I was lying I could see straight into the larger cabin, and I saw you, sir, up to your old tricks as usual, with that poor little boy. Harold, if I had never loved you before, I believe I should have learned to love you then; but he made me quite jealous once, when you were carrying him up stairs; he was in my place, you see, and I knew that he had driven me out of your thoughts for the time."

"But I can't conceive why you should have avoided me so carefully all the way, when your object was to come up with me at last. Why did you not stop me at Dover?" said Clive.

"And be sent back by the next train, like a naughty child. Thank you, that would n't have suited me at all. And a nice scene there would have been on Dover pier, with all the porters and the sailors looking on. Besides, you never would have known how much in earnest I was. You *can't* send me back alone now, Harold," she added, giving her head a little defiant toss. "I have compromised myself too much."

"Yes, you have compromised yourself finely," he answered, looking down upon her with a curious sort of smile. "What will the world say to this escapade of yours, Laura, I should like to know?"

"Say? 'What say they? Let them say,'" she answered, indignantly, quoting the well-known old Scottish motto. "What *can* they say, Harold," she went on, "except that I have run away to France with my own husband; and there can be no great harm in that."

"Your old husband, you mean."

"Old!" she exclaimed; "how dare you call yourself old?"

"You called me an old bear yourself just now," he said, laughing, and evidently glorying in the recollection.

"That's quite a different thing. I may call you what I choose. But you are not old, Harold; you were only forty on your last birthday, I know; and what's that? The very prime of life; quite a young man, in fact. Never call yourself old again, if you *please*."

"Too old for you, my darling," he answered, fondly. "You look ten years younger than you did at Aberdeen, Laura."

"And so will you very soon, if I take you in hand. I'll answer for it, Dr. Laura will do you more good in a week than the whole College of Physicians could."

"Very likely, Mrs. Clive."

"My new name," she said, with a little blush; "No one has ever called me so before. Come with me; I have something to show you, something for you to do."

She drew him with her toward the nearest lamp, so that the light might fall on some-

thing she was holding in her hand beneath her cloak. It was a gold locket, the fac-simile of the one she had sent to him by her brother.

"See here," she said; and as she spoke she touched the spring, and it flew open.

On one side was an old vignette likeness of her husband; on the other, hidden beneath a lock of dark gray hair, lay her wedding-ring.

"Harold, I told you that I was dumb to-day, and so I was—spell-bound, as it were. My heart ached for you when I saw your eye rested on my finger, and missed this from its proper place, and yet I could not tell you then that I have worn it here" (touching her bosom) "ever since you gave it to me. Night and day I have never parted with it; and they tell me that when I was ill and delirious I never would let it out of my hand. I did think I would wear it to-night," she added, in a lighter tone. "I fancied it would look more 'proper,' perhaps, if any one watched me traveling alone; but then the thought came into my head that no one, not even I myself, had any right to put it on again except you. And now, Harold," she whispered, caressingly, "you must marry me over again. Put on my ring, dear, and say the right words once more; for we did not say them quite properly that day, I think."

"We did not do or say anything quite properly that day, Laura. We will have the church's blessing on our marriage before many more hours are over. The next boat shall take us back to England" ("Poor Phoebe!" murmured Laura), "and we shall be at Richmond early to-morrow. Edward shall marry us in his own church the next day by special license, if necessary; and after that—you shall go to the end of the world with me, if you will. In the meantime you shall have it your own way, little one, as you always do."

He held up her left hand; and as he slipped the ring on to the wedding finger, he repeated, half playfully, half seriously, the words of the marriage service: "With this ring I thee wed; with my body I thee worship; with all my worldly goods I thee endow."

"*That's* lucky!" exclaimed Laura, breaking into a merry little laugh; for I lost my purse coming off the boat, and I have only a four-penny piece and three sous in my pocket; and how ever I should have paid for that cup of coffee I had the audacity to order just now, if you had n't been here, I have not the least idea."

That laugh was the sweetest music that had sounded in Harold Clive's ear for many a long day; but it was too much for his poor little wife. Before the last words were out of her mouth, she broke down, and burst into tears.

"Oh, Harold!" she cried, throwing her arms round his neck, and hiding her head upon his breast, "my own dear, dear husband!—mine to have and to hold, in sickness and in health; mine to cherish and obey; and, thank God, I can say it now, mine to love till death us do part."

And Colonel Clive bent his head until his gray moustache touched his wife's face; and as he pressed his trembling lips upon her cheek he said, "Amen!"

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THE
SOUTHERN



FARM AND HOME



FEBRUARY, 1873.
W. M. BROWNE, EDITOR.

PUBLISHED BY
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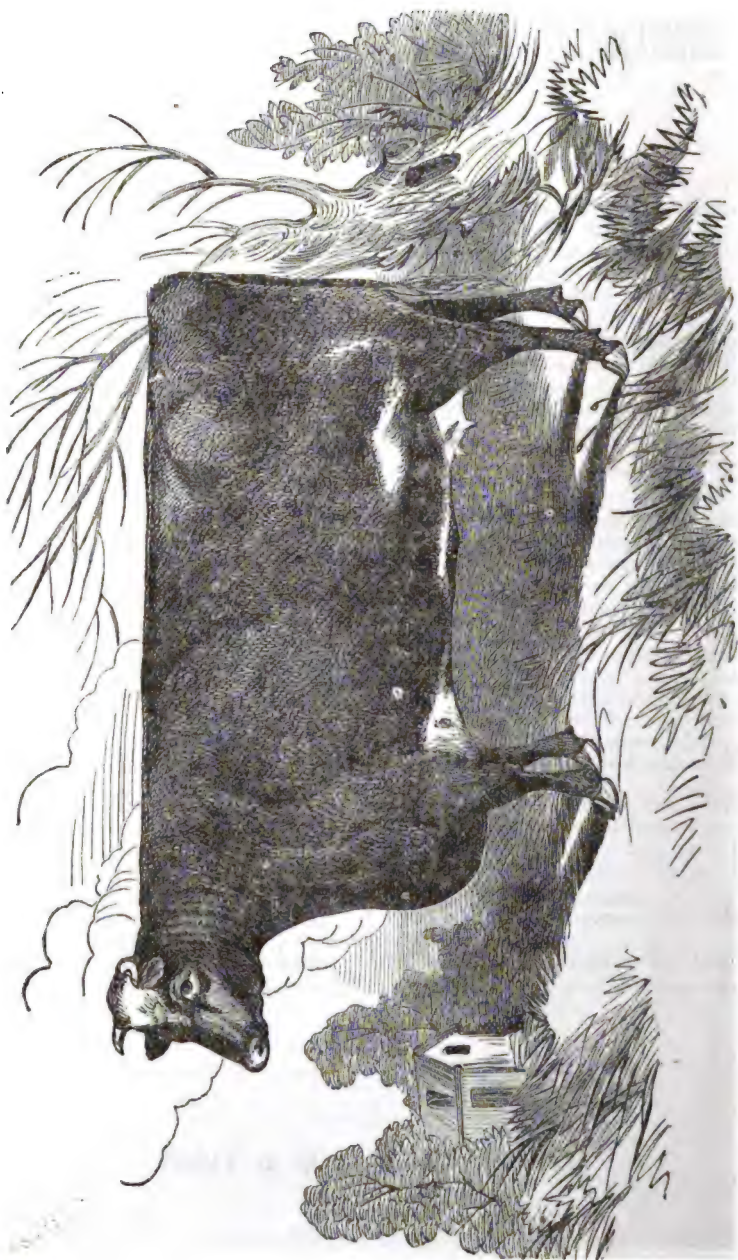
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SHORT-HORN COW, "PRIMROSE."

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV. MEMPHIS, TENN., FEBRUARY, 1873. No. 4.



Farm Work for the Month.

Whether the farming operations of this year will result in success or failure, depends largely upon the diligent performance of the work which ought to be done during the twenty-eight days of this month. It is the shortest month of the year, but it is also the most busy. During every hour of every day that the weather will permit, the plows should be kept running, breaking the soil deeply, while turning under everything in the shape of manure, vegetable matter, refuse—in short everything that will decompose and make plant-food for the coming crops. We reiterate the recommendation to *break deep* and not scratch the surface. One acre well plowed is worth three scratched acres. If nineteen upland farmers out of twenty would follow our advice and loosen the subsoil of the land they cultivate, they would bring into cultivation a body of land which has never been made available to them, and without extending their boundary fences double the size of their cultivated fields. Let no consideration induce any farmer to withhold a single team or hand from the field this month. The hope of being able “to catch up” before planting time will never be realized except by a resort to scratching, that most delusive of all modes of preparing land to receive the seed.

Keep the ox-teams hauling out the manure, and let it be evenly spread over the ground for the plows to turn under.

VOL. IV, No. 2—1.

Fill up the gullies and washed places with brush and logs, and run ditches round the hill-sides to prevent washing. Burn up the logs, brush and refuse wood lying in the fields cumbering the ground, obstructing the plows, and preventing tidy and effective cultivation of crops.

CORN PLANTING.

Toward the end of this month, in a large portion of the Southern States, the planting of corn will commence. We trust that a broad area will be planted this year, so that every farmer in our bright land will not only make enough “to do him,” but enough to carry him well into another year. The success of corn culture depends on the preparation of the ground. No crop sends out so many wide-spreading roots as corn, and if the earth in which they are to spread is not deep and mellow, it is clear that they cannot penetrate far, and that the supply of plant-food they will gather will be insufficient to insure a vigorous plant-growth. Besides this, a deeply-broken, well-pulverized soil is the only sure protection against the evil consequences of a drought. You never will see in July or August corn “in the twist” in a well-prepared field. Remember we recommend a thorough subsoiling of every acre to be planted. We believe it will pay. But if you cannot be persuaded to do so much, let us implore you at least to do this in laying off the ground for planting. In making the list, open the first furrow with a long, sharp shovel, and in the bottom of this furrow run a Brinly subsoiler as deep as the team can pull it, then run a scooter or turnplow on either side of this, and follow with the subsoiler. This is not near as good as a perfect subsoiling, but it is far better than nothing, and if the middles are subsequently well broken, will give a good crop. Do not call this advice

book-farming and reject it, saying that you have not got the mule-power to do the work in time. Prepare as much land as you can in this way, and only plant what you have thus prepared. Your crop will be larger than if you scratch three times the number of acres.

SPRING OATS.

There is still time to sow this best and most remunerative of forage crops, provided the ground be well prepared, enriched if necessary, and good seed carefully sown. If you can only scatter three pecks or a bushel of any sort of oats over a poor stubble field and scratch them in with scooters, let the oats "slide," and save the teams and labor for something else.

SWEET POTATOES.

This crop is much improved in quantity and quality by an early start. Early plants thrive much better than those set out after the weather has become hot and dry. Therefore the bed should be made toward the middle or latter part of this month. Four or five bushels of good sound yams bedded then will furnish slips enough to plant an acre in April and May. It is poor economy to have to wait for the slips to grow when you are ready to plant.

CLOVER.

This is a good month to sow clover. Two gallons of seed per acre sown now upon the wheat or rye fields, or with the spring oats, will generally produce a good stand. If sown on the wheat or rye, sow just before a rain, if with oats, sow after the oats are plowed in, and then cover with a harrow or brush.

TOBACCO.

This is a good time to sow tobacco seed. The bed should be burned as soon as possible, taking care that the ground be perfectly dry. When it has become cool it should be broken up thoroughly with grubbing hoes, the surface then chopped with common hoes, and finally raked over, leaving a perfectly smooth surface. A gill of seed mixed with two quarts of plaster or fine ashes will sow 100 square yards. When the bed is sown it should be rolled, and then covered with straight, fine brush (pine the best), laid north and south.

MANURES.

The compost heaps and all the manure from the stables and stock-yards should, we repeat, be now hauled to the field and spread with as much speed as possible. The sooner they are deposited where they are needed, the sooner

their fermentation will subside, and they will become assimilated with the soil for the use of the crop. Do not dump the manure in little heaps and leave it there to lose its most valuable properties by exposure to the rain, wind and sun, but haul, spread and turn it under.

A MANUAL*

Of the Cultivation of the Grasses and Forage Plants at the South.

BY C. W. HOWARD.

[CONCLUDED.]

It is not at all the design of the writer to propose grass of any kind as a substitute for cotton, which would be preposterous. But it is his purpose to urge the diminution of the area planted in cotton, to impress the necessity of a diversification of our products, and the wisdom of getting the benefit to ourselves of these high prices for hay while they last, which must be for a number of years. We want a cotton crop, a wool crop, a butter and cheese crop, a grain crop, and a hay crop. We want all of these to a greater or less extent, according to circumstances, on a single plantation. This is of course impossible with what we call a full crop of cotton, which requires all hands all the year. But it is possible where cotton is as it should be, one constituent of a four or five years' rotation.

If the writer were called on to say what man, in the extent of his acquaintance, at the South, had made most clear money in proportion to his investment from the cultivation of the soil, he would not hesitate for a moment to designate Mr. John B. Moore, of the vicinity of Augusta, Ga. This gentleman for more than twenty, possibly thirty years, has confined himself to eighty to one hundred acres in grass. The hay he has sold in Augusta. From this small area he has realized annually an income of five to six thousand dollars, drives his carriage, lives comfortably, with the use of a comparative trifle of labor. This profitable process has been going on all these years in a quiet, unostentatious manner, and nobody seems to know anything about it. Our only complaint against Mr. Moore is that he has "hid his light under a bushel." We now ask the study of this luminous example. To the young men of the South, where circumstances will allow, we would say, go and do likewise.

*Entered according to Act of Congress, by C. W. Howard, in the Office of the Librarian of Congress, at Washington, D. C.

IMPROVED IMPLEMENTS FOR SAVING HAY.

When land has stumps in it or rocks upon the surface, these improved implements cannot be used. In such cases the grass must be cut with a scythe. Where it is possible without too great expense, these obstructions should be removed, as the cost of saving a crop of hay is greatly reduced by the use of these implements. These implements are the horse-mower, tedder, rake and hay-lifter and loader. With their aid the grass is not touched by hand, either in cutting, curing or housing. The saving of human labor is more than one-half. The cost is diminished more than one-half. The rapidity with which the work is done enables us to command the weather. At the South the saving of human labor is a great object, as it is very difficult to obtain at harvest time. Any one having ten acres of meadow should provide himself with these implements. The saving annually will be a large interest on his money. This is true where skillful mowers can be obtained. At the South they are very rare. It is seldom that a good cradler is a good mower, as the movement is so entirely different.

The cost of a light two-horse mowing machine is from \$100 to \$120; a hay-tedder, \$80; sulky horse-rake, \$35; say in all, \$250. If we allow 15 per cent. for interest and repair, this would amount to \$37 50. Much more than this sum would be saved annually on saving the hay crop of ten acres of meadow.

RAISING GRASS SEEDS FOR SALE.

The amount of money spent for Northern grass seeds at the South is very large. Last year two seedsmen in Atlanta sold during the season from \$75 to \$100 worth of clover and grass seeds daily. In the small village of Cartersville \$5000 was expended in one season for clover seed alone. The consumption is increasing every year. There is no good reason why we should not raise our own grass seeds and supply our own dealers. At present prices the profit would be large. But little labor and expense attends the process. As an illustration the writer saved this year the seed from a little more than an acre of meadow-oat grass. The yield was six bushels. This at \$5 per bushel, the usual price, would amount to \$30. The grass was cut with a cradle and bound, and was threshed with a flail. The hay was saved, as the seed of this grass ripens while the stalk is green. Southern farmers should stop this leak from the agricultural income of the South. Besides the direct money saving, it would be best to use acclimated grass seeds.

WOODS PASTURES.

Most of our woodland is to a certain extent dead capital. This is not the case where woodland rises sufficiently in value to pay a fair interest on the investment, or so far as necessary fence-rails and fuel are concerned. In some of the older portions of the South there is not sufficient timber for the wants of the farm; but there are vast tracts of timber land in other portions which do not appreciate perceptibly in value, and which are comparatively useless. Woods pastures which correspond to the English parks would in such localities be found very profitable. The timber should be thinned out, leaving the trees thirty to fifty feet distant from each other. Crooked and worthless timber should be cut, leaving rail and mast-bearing trees. Everything that is cut down should be piled and burned in as small heaps as possible, to allow the ashes to be more readily scattered. There is very little of our upland which is rich enough to bring good grass without assistance. The scattered ashes will stimulate the young grass. We have vast quantities of bottom land rich enough to bring good grass, but these are suitable only for summer pastures. They would be poached and damaged by the feet of cattle in the winter. We labor under no deficiency of summer pasture—it is winter pasture that we most need. For this we must depend on our upland, unless during a very dry season on bottom land.

After the ground is prepared by cutting down, burning and scattering the ashes, it should be harrowed, so as simply to loosen the surface. If plowed, the plow will turn up tussocks and lumps, and if these are turned back again on the grass seed after it is sown, they will fail to vegetate. If sown after the ground is loosened, before a rain or during a drizzle, no covering is necessary. If in a dry time a light brush is sufficient. Or if the pasture be small and the stock of cattle or sheep be large, penning them and driving them about for a few days will pack the seed into the ground without inverting any of the sods or tussocks. The grass seeds recommended for winter pastures should be sown on this land, and treated as prescribed for them.

Woods pastures or parks thus formed will convert dead into living capital. We now pay taxes on our woodland; it should pay us something in return. A woods pasture is a great relief to the corn-crib in raising hogs. Trees trampled around and thinned rarely fail in

bearing mast. This, in connection with the grass, will nearly fatten a large amount of pork.

They are also a great saving in the way of shelter. While it is a cruelty to confine stock in a bare lot without shelter, in a woods pasture in our climate they really do not need shelter. This is especially the case where they can have access to a south hillside. On such spots it is always well to leave a thicket for shelter.

Scarcely any improvement would add more to the value of our landed estate than woods pastures or parks. Nothing would add more to its beauty. The parks of England are one of its chief ornaments—an ornament which is also an utility. Fine oaks, green grass, running water, and blatant sheep or lowing cattle, form a landscape which the painter attempts in vain adequately to depict. There is no reason why a large portion of the neglected woodland of the South may not be made to add to our wealth, while it fills the eye with scenes of beauty.

SUGGESTIONS AS TO THE SELECTION OF A GRASS OR STOCK FARM.

There seems to be little to choose as to climate. At the South in each of the plantation States we have three different climates—that of the mountains, the interior and the coast. For live stock the mountains have the advantage in summer, the low country in the winter, while the middle country has a share of advantages and disadvantages of both, without the special excellences or defects of either.

As a general rule a clay soil is best suited to growing good grass. A soil with a good deal of sand may, however, by manuring, be made to yield very good grass. A piece of worn and unmanured sandy land will produce a light crop of crab-grass; the same soil well manured will produce a heavy crop of that grass. The soil that will yield a heavy crop of crab-grass will be pretty certain to produce a good crop of other upland grasses. Still, other things being equal, the clay soil is to be preferred.

The lands most likely in the judgment of the writer to produce heavy crops of timothy and Herd's grass hay, are the rice lands of the coast. They are very rich, and have ample command of water. If the rice planters would apply to their land the agricultural system of Lombardy, they would attain a value of which they have not dreamed. Do they know that the Marcite, or lands in grass irrigated in win-

ter near Milan, rent for from \$60 to \$100 per acre, while hay sells at \$10 per ton?

After the rice lands, the best meadow lands of the South have been as yet almost wholly untouched by the ax or plow. Reference is made to the immense bodies of bottom land, sometimes from five to eight miles wide on our rivers, after they pass from the rolling lands into the flat country. These lands are sufficiently rich, sufficiently moist, and are usually of a compact nature. Being too low for cultivation in cotton and corn, they have been left uncleared. They are worth now generally not more than one dollar per acre—converted into meadow they would pay a heavy interest on \$200. Where they are not within reach of railroads the hay can usually be taken cheaply to market by steamer or flat-bottomed boats. The wealth of the South is to be largely increased from this now useless source.

Nothing is said of the range portions of the South, because where there is an exclusive reliance upon the range, nothing but range stock can be sustained. The object of this Manual is to give suggestions as to the rearing of good live stock and the cultivation of good grass for hay or pasture.

If hay is the chief object, proximity to market or river or railway transportation is a material object. If summer and winter pasture is the leading feature, proximity to market is not so important, as stock can be cheaply driven.

Upon grass farms sheep and cattle are the most profitable stock. Cots and hogs require too much grain.

A level surface of upland, without running water, with an excess of sand, is the most unsuitable for a grass farm, and of course for stock-raising.

The perfection of a grass farm, so far as natural requisites are concerned, are enough bottom land to yield the meadow hay that is required for sale or consumption, enough level land to meet the home necessities of grain, and also for lucerne, and the rest rich broken land. In our climate the steeper the hills of our pasture lands the better, provided they be rich. The reason of this is that in summer the grass will be exposed to the sun only a portion of the day, and in winter the north hillsides are always most natural to grass, and the south sides give stock a sufficiently warm exposure.

To young men at the South entering upon agricultural life, grass farms offer great inducements. They require so little labor and so

little outlay. If a young man begins with exclusive cotton culture, he must buy a number of mules and farm implements. He must lay in a stock of food for his mules and laborers. This requires much ready money or running into debt.

These expenses are largely avoided on a grass farm. If a return must be had the first year, grass seeds can be sown with small grain—the whole expense is then the cost of the grass seeds. Afterward the farm will provide for all its own expenses. The commencement of a stock of sheep and cattle is a trifle as compared with the cost of a number of mules and food for them.

The pleasure of life on a grass farm is incomparably greater than on a plantation devoted exclusively to cotton. The latter exacts our whole time; the former gives leisure for reading, study, and the amenities of social life.

The indolent negro is a constant thorn in the side of the cotton planter. It is not necessary to rise before day to fret at our live stock because they will not eat and grow, or with the grass because it will not shoot up its beautiful green blades in the spring-time. Neither the stock nor the grass quarrel with us at Christmas about wages or their share of the crop, or threaten to carry us before a magistrate.

CONCLUSION.

Sound political economy requires that the South should raise its own horses, mules, sheep, cattle and hogs, and produce its own wool, butter, cheese and hay. When we add these products to our cotton and rice and sugar, we shall perhaps live more independently than any other people in Christendom.

Grass culture is the basis of this independence. It is a dictate of philanthropy, as well as a suggestion of interest, to promote it. If this little Manual, making no display, using no scientific terms, but as popular as simple language could make it, shall have assisted in the most humble manner in the attainment of this end, it will have fully answered the purpose of the writer.

NEW METALLIC ALLOY FOR COOKING UTENSILS.—It is well known that all alloys containing copper, even in minute proportions, are readily acted on by acids, which makes them dangerous when used for household utensils. M. Helouis has proposed an alloy, under a name of platinum bronze, which is entirely inoxidizable. It is a nickel alloy, prepared from nickel made thoroughly pure by various processes and maceration in concentrated nitric acid.

Plowing vs. Scratching.

Good plowing is the basis of successful farming. No amount of after-cultivation of a crop will make up for any defect in the preparation of the soil to receive the seed.

One would suppose that at the South, where a large proportion of the land is kept in constant cultivation, the science of plowing would be better understood and more generally practiced than in the Northern States, where more than half of every farm is kept in pasture for stock, or in meadow to produce hay. But we all know that the contrary is the fact. The Northern farmers excel ours infinitely in deep and thorough preparation of the soil, using the best and most approved implements, and raising larger crops to the acre than are known at the South, except in the few exceptional cases where plowing has entirely superseded scratching. When plowing time comes at the South, how is the work generally done? The mules or horses are hitched to as many rudely-constructed scooters as there are animals, with a negro behind each, and the surface of the ground is partially scratched to a depth of from two to four inches, leaving a large portion of the surface unscratched. The average depth of the furrows is about four inches, so that the average depth of broken soil rarely exceeds two inches. The subsoil is as hard as an asphalt pavement, on the surface of which the point of the scooters or bull-tongue leaves little channels or gutters, by which the first heavy rain carries off most of the loose soil, leaving nothing but the hard pan. Every one who has observed one of these bull-tongue-scratched fields after a hard rain, where the surface is not entirely level, has remarked how much of the loose soil has been washed away, and has been able to trace every furrow by the lines in the subsoil which have been scratched by the point of the scooter. And this is not the only damage. Where the lands are a dead level, and the water does not run off, the subsoil being impenetrable, the excessive moisture is only removed by evaporation, leaving the soil cold and unhealthy for the growth of plants. In times of long drought also, the moisture being removed by evaporation, the shallow surface-soil exposed to the sun's rays soon becomes dry as an ash-heap, and the roots of the plants being unable to penetrate the subsoil perish from want of the moisture locked up below them, which, in a deep, loose soil, they would carry up to the plants by capillary attractions. Ex-

cess of moisture and depression of temperature at one time, and lack of moisture and excessive heat at another, combine to injure plant-growth, and consequently to cause small and unprofitable crops.

If instead of this baneful system of scratching the land were plowed closely and evenly to a depth of six or seven inches, a subsoil plow following in each furrow *breaking*, not turning, the soil to a further depth of six or seven inches, the rains would not wash away the soil, the ground would be warm and fit to receive the seed at an earlier period, a deep and mellow bed would be prepared in which the roots of the plants would be able to gather food and water, and the most certain protection against drought would be afforded.

Where deep plowing is practised, too, all the vegetable matter, refuse cornstalks, etc., are turned under and enrich the soil, not to mention the tidiness and cleanliness of the process, whereas on the scratched lands these things are left scattered over the surface, impeding after-culture, choking the plows and injuring the growing crop, or they are gathered into piles and burned, at the loss of all the fertilizing properties they possess.

Is it any wonder then that people who will persist in scratching, and refuse to hear of a double-turn plow followed by a subsoiler, declare that they cannot live on their farms, and must move away in search of fresh land? If, however, they would cultivate only so many acres as they could plow deep and subsoil, they would make double the crops they make by scratching, expend much less for labor, and be entirely content with their old lands.

Shall we continue Poor or become Rich and Independent?

We hardly take up a paper or periodical in which we do not see some allusion to the magnificent climate, fertile soil, variety and excellence of productions, and inexhaustible resources for the support of man and beast of our "Sunny South." It is all true. We have the finest climate in the world, the richest lands, the capacity to raise the greatest number and the best qualities of productions, and we have the power, if we had the will, to produce everything that we need for our support and comfort. But how far do we avail ourselves of the means which a bountiful Providence has placed within our reach? How much do we raise for the support of man and beast? Where

does our corn come from? Whence do we derive our meat? Where are our clothes made, from our hat to our boots? Who manufactures our hardware, from a nail upward? Who supplies us with the woodenware that we use? Do we make our own harness, wagons, farm implements, etc.? Do we manufacture our own furniture?

The answer, taking the population as a mass, must be, No. We get a large portion of our corn from Illinois, most of our meat from Ohio and other Northern States, all of our clothes, the greater part of our hardware, woodenware, harness, &c., &c., from Yankee land. Go into the stores in our cities and towns, and not one in a hundred of the articles offered for sale is of Southern growth or manufacture. Even the onions and cabbages we eat come from Massachusetts.

Practically, with all our advantages of climate and soil, we raise nothing but cotton. We buy from abroad everything else we eat and wear and use, and the sum we receive for our sole product is generally insufficient to pay what we owe for all other commodities. The consequence is that instead of being the richest agricultural people in the world we are about the poorest, and so long as we pursue the same improvident course we must continue to be poor.

We are just entering on another agricultural year. We are making every effort to increase our working force and add a few mules to our plow power, and we are making arrangements with factors and commission merchants to make us advances of money and supplies to make another crop. What crop? Cotton—nothing but cotton. It is for this we want more hands and more mules and more credit. To make more cotton. Few think of making more corn, raising more meat, developing the varied and boundless resources of our country, and manufacturing all that we need for our own consumption. We have the climate and the soil to produce not only enough of the cereals to support our population, but to be one of the richest granaries in the world. Yet we buy corn and flour. We have inexhaustible mines of iron ore, and yet there is not an article into the manufacture of which iron enters that we do not buy from abroad. We have a country capable of supporting all the animals we need at less cost than any other part of the world, and yet we buy most of our mules and horses, buy Yankee butter and use "condensed milk" for our coffee. Our forests

abound with every variety of wood of the finest quality, and yet every tub, bucket, pail and barrel we use bears the brand of a Northern manufacturer. To complete the catalogue would fill a volume.

It is not that we lack the inventive genius or the skill, because during our war it was sufficiently demonstrated that our people possessed both in a high degree. It is because we lack energy and enterprise, and because we lazily persist in nursing the delusion that millions of bales of raw cotton are the gold mine which is yet to make us all rich and independent. When we make all that we want, and raise all that we consume, and not till then, can we be either rich or independent, because not till then can we be free from debt.

For the Southern Farm and Home.

Letter from John Plowhandles.

SPECIALTIES IN FARMING.

MR. EDITOR—You are aware, and so probably are your readers, that I am, and for years have been a deadly foe of the all-cotton system of our Southern planters, and that I have labored zealously to induce them to adopt a wiser and more provident course. I have scolded and coaxed, bullied and cajoled, used foul means and fair, to induce them to abandon an error which I knew would be fatal to their prosperity, but though I could bring their own experience of the past five years to sustain my argument now, I find as many all-cotton lunatics to-day as at any time since the close of the war.

In discussing this question recently with a southwestern planter of prominence and large possessions, I heard him say that he bought nearly all his meat, and a good deal of his corn, and that he always bought Northern hay for his stock. I remonstrated with him as vigorously as politeness would allow, and showed him, as I thought, the costly imprudence of his course, whereupon he told me as a thing which he evidently believed, that cotton-raising is the "specialty" of the Southern planter, and that he cannot afford to abandon it, even partially, to raise any other crop. My friend is a man of enlightenment and culture, perfectly sane on every other subject, and gives all his time and attention to his plantation, but he believes in the specialty, and intends, having bought more mules and hired more hands, to plant an increased area in cotton this year. He has made arrangements with his merchant

for all the meat he will need, and for the corn, hay, etc., he may require in the late summer. He told me that he owed several thousand dollars of the purchase money of his plantations, that he owed a big sum to his merchants, and that though he had made a good crop last year it would not quite pay out, and that he must borrow to make the next crop. I said to him, "then your specialty is unprofitable, why do you stick to it? Any business which runs you in debt is a failure, and ought to be abandoned. If you had not had corn and flour, hay, meat and other supplies to buy at high prices and on credit, and had you been able to control your crop of cotton, selling when you pleased, would you not have been better off to-day?" "Oh! certainly" said he, "but if I had tried to raise all the things you mention, I could not have raised so much cotton, and then I might have failed." Then I heard repeated the oft-told fallacy, that with free negroes no man can raise meat, and that it does not pay to raise corn worth from 75 cents to \$1 per bushel on land that will produce a bale and more to the acre, winding up, of course, with the specialty refrain. I told him that before the war in my old State, some of the largest slave-owners did not raise more than a bale to the hand, but they raised an abundance of corn, wheat, oats, potatoes, etc., and never bought a pound of meat in their lives, and they were the most independent and wealthiest planters in all Georgia. They did not believe in a specialty, but in mixed farming, and they never owed a dollar, but had thousands to lend and to invest. The reason of the superior advantage of the mixed farming over the cotton specialty is obvious. It is dividing the eggs or putting them all in one basket. The man who has a diversity of crops has something he can sell at all seasons of the year at remunerative prices. If one thing fails he can fall back on another, and he cannot be deprived altogether of a support and of an income of some sort. Besides he has no debts, and no interest eating out the vitals of his industry, and wasting his income before it is made.

The *ignis fatuus* which has led our planters on from one failure to another for the past six years, has been the hope to make a big crop, get a big price and have a big surplus at the end of the year. They are poorer this sixth day of January, 1873, than they were on the fatal ninth day of April, 1865, and the sole cause is the cotton specialty. If their land would not produce the cereals in as large quantity and of

as fine quality as any other part of the globe, if they could not produce hay and clover, and root crops and vegetables and fruits in greater abundance and luxuriance than any other farmers in the world, if they could not raise horses, mules, cattle of all kinds, sheep and hogs as easily and profitably as any others—if, in fine, cotton was the only thing they could produce, there would be an excuse for their poverty. It would be their misfortune and not their fault. But as it is, their folly is criminal. The specialty doctrine is the most vicious and ruinous that any people ever followed.

California made a specialty of raising gold for many years, and while she adhered to it, buying from abroad everything she needed, she was one of the poorest States on the continent. Now that she has diversified her industry, and made her gold her surplus crop, she is the richest and most prosperous. She has divided her eggs.

JOHN PLOWHANDLES.

For the Southern Farm and Home.

System in Farming.

MR. EDITOR—The glaring defect in Southern farming is the absence of well ordered system. As a general thing we have no accurate knowledge of the size of our crops, their cost, the number of stock, implements, etc. We can only form an approximate estimate of the contents in acres of any field, and therefore, at the end of any year when we try to discover how much we have made or lost, or how much any particular branch of the farm has made or lost, we can only make a rough guess. Ask any one of your acquaintance how much wheat, oats, corn or potatoes he has made this year, and the chances are an hundred to one he will answer "I reckon I made *about* — bushels." Ask him how many acres in any field he cultivates, and he will answer in the same way, "*about* — acres." We only know how many pounds of cotton we make because we receive the factor's account of sales. We do not know how many pounds of cotton we have made per acre on any particular field.

If a merchant or banker or any other business man were to pursue the same guessing course, ignorant of the extent of his stock on hand or capital invested, taking no account of the condition of his individual customers, and concluding at the end of the year that he has made or lost *about* — dollars, he could not long keep his doors open. He would soon be compelled to cultivate the acquaintance of the

bankruptcy court. Order and system are as important to success in farming as in any other business. The farmer should know exactly the number and value of all the things animate and inanimate which he owns and uses upon his place. He should know the exact area of every field he tills, and if possible he should have a map of his place showing every field. He should keep an account day by day of what he expends on each field, and then when he ascertains by accurate measurement what each field has yielded, he can see precisely where his operations have been profitable and where they have resulted in loss.

This is not nearly so troublesome or so difficult as many suppose, and even if it were it should be done, because there can be no success without it. It will cost a little, not much, to get a surveyor to make a map of the farm showing the size, position, form and principal features of each field. Whatever it costs it is worth. When the farmer makes his plans for pitching his crop and carrying on his operations for the year, this map will be of incalculable value. We cannot keep on much longer in the old haphazard slovenly way. We must banish "*about*" so many bushels from our vocabulary, and use *exactly* so many in its place.

You would do well, Mr. Editor, to republish the excellent articles by Mr. Sam. Barnett, on "Plantation Accounts" which you published last year. The advice they contain is exactly what we need.

FACTS AND FIGURES.

MONROE CO., GA., January, 1873.

For the Southern Farm and Home.

Meadow-Oat Grass.

MR. EDITOR—Among the various grasses which can be raised successfully and profitably at the South, I know of none superior to the meadow-oat grass (*arrhenatherum avenaceum*.) It will grow well on any good dry soil, and will, after the first year, yield three good cuttings of grass or hay. It will ripen quite as early as clover, and on this account is the best grass to sow with clover. I think it exhausts the soil less than timothy, and with slight top-dressing will continue to yield good crops as long as any grass should be left unplowed.

It is better to sow it in the spring—as early as practicable—with oats or rye, care being taken not to cover it too deep. It does well when sown with wheat in the fall, but there is this objection, that it grows almost as fast as the wheat, and interferes with the clean har-

vest of the grain. Stock like it better than any other grass, and it is especially nutritious to milch cows. The quantity of seed to the acre should be not less than two bushels. Three bushels are not too much.

I should like to see it introduced generally into the South, as I am confident it would do well and prove a great benefit to our people.

MARTIN.

PRINCE EDWARD CO., VA., Jan. 7, 1873.

Corn Culture.

BY JOHN C. BAGSDALE.

If the land intended for corn is stubble or has a growth of weeds or grass upon it, turn them under in September. Turn just deep enough to cover the grass and weeds, and follow with a subsoil plow, the deeper the better. If the land was cultivated in corn or cotton the previous year, and has a growth of young hog-weeds or any other crop of young weeds upon it, turn them under in January or February and follow with the subsoil plow as deep as it can be plowed. The land should not be turned more than three to four inches deep, or just deep enough to destroy all young weeds or turn under any green crop or vegetable matter that is upon it. The turn-plows should be used for the purpose of turning under a green crop of some vegetable matter for manure, or to destroy a crop of growing weeds or grass, and should only be run deep enough to effect these purposes, and if neither of these purposes is to be effected, the turn-plow may be dispensed with and the land broken with any other plow that will most effectually break deep and pulverize well. The land being turned and subsoiled, about the first of March, or just before planting time, it should be cross-plowed with a square-pointed scooter, close and deep as it can be done. The husbandman must now determine for himself as to what his land will bear or how thick his corn will grow. It is a fatal error to undertake to grow too many stalks on the land. The hill system is better than the drill for the reason that it is more convenient to arrange the corn the proper distance apart and less trouble to cultivate it. I would not drill unless it was hillside, to prevent the land from washing, or narrow strips that were not convenient to plow both ways; but if the corn is to be drilled, lay off the rows just as wide as the stalks should stand apart in the row, so that each stalk shall have its equal portion of land, allowing the roots to feed on an

equal distance all round the stalk without coming in contact with the roots of other stalks. Any person who has ever noticed the growth of plants or trees will readily see the advantage of this system. For instance, suppose the land is able to produce one good stalk of corn on every square yard, would it be best to have two stalks to grow side by side on every other yard, or one on every yard by putting two together? The roots would immediately come in contact with each other and the stalk have to draw its nourishment pretty much from one side, and the roots from the other side would have to travel much farther and not be likely to bring the same amount of food to the plant and develop the two stalks and their fruit so well as if each grew on its own yard. The properties of the soil would be more equally distributed among the corn plants. So with the rain, sunshine, atmosphere, and every thing else that is for the benefit of the corn plant. It is very important, either in drills or hills, to give each stalk its equal portion of territory, so that it may have equal distance on all sides. Be sure not to plant too thick. Four to four and a half feet each way is thick enough for the upland of this country, and one stalk to the hill. The rows should be run off with a good coulter or long scooter, three furrows together. First run the row and then a furrow on each side, plow deep, as this is the last chance you will have to plow under the hill. Cross with a long scooter and give the same distance. The situation and locality have much to do with the time of planting. Put in plenty of seed. It is better to have two stalks to take out than to have one to replant. Soak the seed corn in new tar. Roll it in sand to keep it from sticking together. Sprinkle pulverized sulphur over it while rolling in the sand. This is the best remedy against birds, moles and bud-worms that I have ever found. Drop the seed in the scooter furrow at every intersection of the rows. Cover with a double foot plow, two small scooters running straddling the row. This will do the work effectually, and no scraping will be needed. The corn should not be planted any deeper below the surface than is sufficient to give it moisture and depth of earth to cause it to vegetate and come up. No matter how deep it be planted, the roots will grow near the surface if they ever grow at all, and near the surface is the place to deposit the seed. When the corn gets up and has about three blades, run around it with a long scooter as close as possible. There

is no danger of injuring the corn by breaking the roots at this plowing. It is very essential that the land be thoroughly plowed. All my experience for forty years has demonstrated the fact that corn cannot be successfully grown on hard land. Plow out the middles of the rows with a good shovel-plow, follow in about three days with the hoe, in order to destroy any grass or weeds that may be left by the plow. By that time you can tell better what has been left undestroyed by the plow. Re-plant all missing hills as soon as the corn is done coming up. Thin out to a stand as soon as it is large enough to be out of the way of birds and other insects. Thin carefully, taking the stalks out by the roots. Do not loosen the plants that are left, and be sure not to leave the corn too thick.

The after culture may depend somewhat upon the nature of the land. If the land be loose and not liable to run together and get hard, the plowing may be done with a sweep and very shallow, just deep enough to destroy all grass and weeds. Go over the crop once in every fifteen or twenty days, not more than twenty-one days at farthest. The hoe need not follow unless the weeds cannot be destroyed by the plow. In that case the hoe should follow to clean away all grass and weeds left by the plow. Continue to plow and hoe until the corn begins to silk generally. Have it then clear of all grass and weeds, and the work is done. If the land is liable to bake and become very hard from heavy rains, it is better to use the shovel or some shallow plow, and plow pretty thoroughly, as it is better to break the roots of the corn to some extent than to have the land so hard that the roots cannot penetrate it. Corn very quickly recovers from the breaking of the roots in a well cultivated and loose soil. When nature and nature's God decreed that man should earn his bread by the sweat of his brow, and that the earth should bring thorns and thistles, knowing that man would not be able to subdue the thorns and thistles and the great multitude of weeds and grass that are so much inclined to grow among the corn, and in such proximity to it, without breaking the roots of the corn, he also arranged the nature of the corn plant so that it will very quickly recover from these drawbacks. The cultivation of the crop is not to be governed by any particular number of times going over. After planting, the main points are to keep the corn free from grass and weeds, and the land loose and level. The more level the land is the more equally

the rain that falls is distributed among the corn plants, and the same is true of the sunshine and atmosphere.

If the corn is to be manured in the hill, it is best to put the manure around the corn after it comes up, just before the first plowing—not too much in a heap, and for this reason: I have frequently seen where manure was deposited under the corn or with the grain, that it would come up and make a rapid growth for a while, but about earing time it would fail, the stalk would become yellow and hard, and the crop prove a failure, because the manure had either been exhausted or become dry; when, had the manure been properly applied, there was enough to make a good crop. When the manure is placed around the corn, the roots strike into it about the time the corn is preparing for the ear, and it is apt to get the full benefit of the manure and make a good yield.

Much more might be said about the different kinds of plows and implements to be used in the culture of corn, but there are only three essential points on the part of the husbandman in order to secure a good crop. The first is to have the land rich; the second is to thoroughly break and prepare it before planting; the third is to keep it clean of weeds and grass, and as loose as possible, till the crop is laid by. The plow and other implements that will most effectually accomplish these ends with the least labor, are the best.

The plan above given for the culture of corn is one based upon long, personal experience, and close observation. The turn-plow and subsoil plow have not been much used by me, though I think them great improvements.

For the Southern Farm and Home.

Covering Corn.

MR. EDITOR—I have tried all known ways of covering corn, the hoe, the plow, the harrow, and the foot of the dropper, but I have found none so good as the board, just such as is commonly used for covering cotton. It is quicker by far than anything but the harrow, and does the work better than that. It covers it an even depth, and pulverizes the earth round the seed. I have tried it and found it to work like a charm, and I hope that others will try it and have a like experience. S. W. B.

The Chattanooga *Daily Times* says it is probable that within six months Chattanooga will have one of the largest and best cotton factories in the South.

For the Southern Farm and Home.

Why Farmers should Write for the Agricultural Papers.

MR. EDITOR—Professional men who have followed their respective professions for a number of years, and have attained prominence and fame in their several walks of life, generally write what they know, and it is from their writings that the young men who desire to become lawyers, doctors, civil engineers, etc., derive their instruction and fit themselves for the practice of their professions.

Farmers rarely write what they "know about farming." They do not try to educate those who are to come after them. They under-rate their profession and think that it can be learned by anybody, who applies himself to its practical pursuit—that theory is of no value. Now, sir, I think that Mr. David Dickson, of Hancock Co., Ga., has done more for improved farming by his book than he could have done in a hundred years, however successfully he might have planted, had he not written his experience for the benefit of others. We have hundreds of Dicksons in every State of the South,—men of equal intelligence, of as ripe experience, as successful practical planters—but they are unknown and their teachings and example are lost to the mass of their countrymen, because they will not write what they know. Meet them and they will talk in the clearest and most instructive manner of all that relates to their agricultural plans and pursuits, but ask them to write and they immediately hunt for an excuse. "I am not in the habit of writing," says one. "I do not want to get in the newspapers," says another. "I would make mistakes in spelling and the use of words, and people would laugh at me," says a third. These are the poor excuses which are given by men, who, if they would could fill the columns of your magazine and other publications of like character, with the best practical information in relation to all the departments of agriculture, and advance the cause of progress and improvement with magical effect. I have often told them that if they would only give the facts, you editors would see that the spelling and the language were fixed all right, and that you would gladly see to the punctuation, if they would furnish you with the results of their observation and experience.

You do not want finely polished sentences, classical quotations, or rhetorical flourishes. You want facts about manures, soils, plowing,

cultivation of crops, management of stock, etc., etc. You do not care a cent whether a sensible, practical farmer, who sends you a communication on any of these subjects, spells corn with a k, or phosphate with an f. You publish an agricultural paper, not a spelling-book. You want the experience of farmers in order that you may instruct others. In no way can we help each other more effectually than by writing short practical articles for the agricultural press. We can thus teach each other. We can thus interchange ideas and benefit by each other's experience and observation. David Dickson, John H. Dent, C. W. Howard and a few others, have done incalculable service by their writings. Will not others follow their good example, and help in the good work which the agricultural papers are doing all over the Southern country?

SUBSCRIBER.

NEAR TUSCUMBIA, ALA., January 10, 1873.

For the Southern Farm and Home.

"Leaks on a Farm."

MR. EDITOR—The caption at the head of this article has a vast meaning, and to the thoughtful mind is very suggestive. You published, over a year ago, an excellent paper by Capt. Montgomery on this subject, but he could not in one article cover all the points to which it applies. I am satisfied that more money is to be made by seeing what others lose by the "leaks" on their farms, than by watching the sources of their prosperity. I have my mind's eye now upon one or two of my planter friends, who own large bodies of land, plant for big crops, make them generally, and never have a dollar of surplus, and not only that, are usually in debt to their merchants. These men are surrounded by leaks of all descriptions. If they would stop them they would soon become rich, but they will not take the trouble. "It goes without saying," as the French say, that they buy all their meat and a large portion of their corn and forage. Big leak number one—They keep no accurate account of their income and outgo, and therefore never know how they stand in relation to their business. Big leak number two—They have, as far as numbers are concerned, plenty of mules and horses to do the work of their plantations, but many of these are inferior animals, do inferior work, cost as much to feed as the best, and consequently, in the preparation and cultivation of the soil, and all the operations in which animal power is used, there is another big leak, which

costs a great many dollars annually. Then again, they have poor, scrubby stock, especially milch cows. They have plenty of them, but it takes nearly all the milk of all the cows to "furnish milk for the coffee." They make little or no butter, and have scarcely any butter-milk. Two or three good milch cows of some improved breed, which could be well kept on one-third of the feed these *runts* consume, would give a supply of milk and butter. What a leak this is! And so it is with the few hogs they "keep round the house." They are generally of the saw-back kind. When these hogs are taken up to fatten, they are generally fully two years old, and when killed they never weigh over one hundred and seventy-five pounds of pork. Good Berkshires, well kept, would be fit to fatten at a year old, and would yield at that age two hundred weight of pork per head. Another leak! Then they take little or no care of such stock as they have. They do not feed them well or regularly, do not shelter them in bad weather, and do not know how to treat them if they are sick. Another leak.

The manure from the stock and hogs is scattered all over the fields as it is dropped, to be wasted in the sun, wind and rain. No effort is made to make a manure pile, but when fertilizers are needed the merchant is written to to send on so many tons of somebody's superphosphate, costing fifty or sixty dollars a ton, and as they are generally bought on credit, interest and commissions for advances, besides freight and wastage have to be added to the cash price. This is a tremendous leak. Then the waste by loss and improper care of implements, wagons, machinery, &c. The time lost in hunting up the tools, gear, &c., when they are wanted. The cost in time, wear and tear of stock and wagons hauling home things that should be made upon the farm. The loss by the compulsory sale of the products of the farms to meet liabilities to factors. The want of care in the selection of seeds and the money wasted in purchasing advertised humbugs. The bad and loose management of laborers. The injury to health and pocket by neglecting to have a vegetable garden and orchard; and last, though by no means least, the failure to profit by the means of instruction and improvement offered by agricultural books and papers—having "no time or money to fool away on book farming." These are leaks which I have seen flowing freely on several places, and which are sapping gradually the

prosperity of those who do not try to stop them. I could point out many more, but I have already written at greater length than I ought. The subject is a great one, and is well worth the attention of our planters.

BOLIVAR.

NEAR FLOREYVILLE, MISS., JAN., 1873.

For the Southern Farm and Home.

Dog Laws.

MR. EDITOR—The Legislatures of the Southern States are generally now in session, and it may be well, therefore, to bring to their attention the propriety of their passing adequate laws to protect the farmers' flocks of sheep from the depredations of dogs, or rather, I should say to enable farmers to keep flocks of sheep at all. At present it is really practically impossible for any one to introduce sheep on his place unless he pens them in his yard. The packs of useless curs which infest every neighborhood would kill or maim a large flock in one night. It is useless for you and other agricultural writers to show us the value and importance of sheep-husbandry, and how peculiarly it is adapted to the Southern States, so long as the State Legislatures fail to pass laws to protect us against the inroad of the curs aforesaid. In all other countries where sheep are raised dogs are restrained by making their owners liable for the damage they may do, or by imposing a heavy tax upon dogs, so that people will not willingly pay the tax for any but dogs that are good for some useful purpose.

I see that the governor of Tennessee proposes to tax pretty much everything else. Might he not relax some of his recommendations for the taxing to death of capital invested in commerce, by advising a heavy tax upon dogs, thus enabling us farmers to buy and raise sheep, improve our lands, lay the foundation of a wool industry, and in time increase largely the taxable wealth of our people.

Our African citizens all of whom own one or more ravenous and utterly useless curs, might object to paying a tax upon each of their pets, and they might threaten to use their right of suffrage against those who would favor such a tax. But surely our legislators are not influenced by sordid considerations in the discharge of their duty. They must remember occasionally the interests of their poor white brethren, who have votes too, by the way, whose interests demand that they should not be prohibited from engaging in a profitable

industry because the Sambos and Cuffeys desire to keep half-starved dogs.

The farmers should move in this matter, and bringing their influence to bear, compel the Legislatures to do them justice and give them the protection they need.

TIPTON.

January, 1873.

For the Southern Farm and Home.

How to Make an Under-Drain.

MR. EDITOR—Those who do not understand the business spend much more time and money than are necessary in making under-drains. In the majority of cases a three foot drain is deep enough for all purposes. The width of this drain at the top need only be twelve inches. The first *spit* is usually dug out with a common spade, and goes to a depth of about a foot. The loose earth is removed with a shovel. The second *spit* is dug with a narrower spade, thus contracting the width as the depth increases; and the loose earth is removed with a scoop or a long-handled shovel with the sides turned up. This brings the drain to two feet deep. The third *spit* is dug with a still narrower spade, and care is taken that the bottom of the drain is the exact width of the drain-pipe to be laid upon it. There should be just room enough to admit the pipe but no more, as, if the bottom of the drain is too wide, there is danger of the pipes getting out of place. The true economy in digging drains, is only to remove the quantity of earth necessary to make the drain of the desired depth, and wide enough at bottom to admit the pipe. Great care should be taken to remove all the loose earth, or as drainers call it, all the crumbs, so as to leave the surface at the bottom perfectly smooth.

Another way of digging a drain, and I think it is the cheapest, is by using a subsoil plow to break the soil, which has the beam and handles so constructed that they may be elevated as the ditch becomes deeper. Hand labor is only required to throw out the loose earth with shovels or scoops, and to smoothe the sides of the drain. One two-horse plow will break earth fast enough to keep eight or nine men busy with shovels. The cost of a drain made in this way need not exceed fifteen cents per rod in ordinary land.

As it is the cost of draining which deters many from engaging in the work, the utility of which they admit, I have thought it useful, perhaps, to write out such practical hints on

the subject as occur to me. Draining, exclusive of tile, need not cost more than seventy-five dollars per five hundred rods.

January, 1873.

DEANSTON.

For the Southern Farm and Home.

Deep Plowing.

MR. EDITOR—If our agriculturists would only recognize the truth of the saying that they "own another farm immediately under the one they now cultivate," and that they have a fortune buried somewhere on their places a foot under the surface, which they can find by stirring the soil to that depth, we would soon be the richest people in the world. There are hundreds of thousands of acres, capable of being profitably plowed to the depth mentioned, which have never been broken to a greater depth than three or four inches. There are hundreds of thousands of acres thrown out as worthless for cultivation, and now growing up in pines and broomsedge, which have never been penetrated by a plow beyond three inches, and which, if stirred by a subsoil-plow to-day, would yield good crops.

Do not imagine, Mr. Editor, that we are improving in this essential particular of good farming. A few intelligent planters plow deeply, and have found the benefit of doing so; but the mass of farmers stick to the twister and the scooter and the bull-tongue with a fond tenacity, plow about two or three inches deep and then blame Providence for bad seasons, bemoan their bad luck, and talk of moving away to some fresh land. While we employ negroes to work our plantations on shares, and while we rent them our lands, improvement is an impossibility. It is quite vain to look for it. What negro could be made to believe in the efficacy of a two-horse plow, followed by a two-horse subsoiler?

I tell you, Mr. Editor, that I have not seen a furrow turned on upland this year by any negro plowman, which was deeper than three inches.

But I must not throw all the blame on the negroes. There are very few overseers who believe in deep-plowing and subsoiling—who do not think that it is "killing the land" and "killing up the stock." And are there not plenty of planters who entertain the same opinion? You have to repeat your sermons in every number if you will make our people become converts to the doctrine of deep-plowing.

UP-TO-THE-BEAM.

Jan. 7, 1873.

For the Southern Farm and Home.

Irish Potatoes.

MR. EDITOR—Although the Irish potato is of Southern origin (excuse the bull), most of the seed potatoes used at the South are imported from the Northern States, just as we import most of our onions from Massachusetts. Few people cultivate more than a small patch of this excellent tuber, just enough to furnish the table with a few *early* potatoes. I do not know half a dozen people who raise a supply for the year, and not one who uses any but northern seed.

I think we might mend our ways advantageously in this particular, and that with a very little trouble we could raise as fine and as abundant crops of Irish potatoes as any of our northern brethren. There is no more wholesome vegetable. They do not require much cultivation. They are capital stock food, and if the crop is larger than is needed on the place, a ready market can be found for them in any town accessible by railroad or river.

Next month is the time to plant for the main crop. The best varieties I know are the Rose and the Goodrich.

EARTH APPLK.

LAUDERDALE CO., TENN., JAN. 11, 1873.

For the Southern Farm and Home.

Self-Sustaining Farming.

MR. EDITOR—If we admit the truth of the maxim as applied to agricultural production, which applies to every other industry, that the production should be controlled by the demand and the adaptation of the country to such production, then it follows that the South ought never to import a horse, mule, sheep, hog, cow, a pound of butter, wool, hay, or grain of any kind. We can raise all these things much cheaper than we can import them. In all of them we can be entirely independent of the rest of the world. It would interfere, of course, with our exclusive attention to cotton, but this loss would be an inestimable gain, because it would directly promote the improvement of the land, check the gradual exhaustion of the soil now going on, promote the comfort and prosperity of the people, and protect them against the ruin involved in the failure of a crop under the one-crop system. It is true, if the crop is large and prices rule high, the one-crop farmer makes large gains; but if the contrary happens, or if one of the suppositions fails, then what? Does not the mixed farmer, with his greater number of chances, come out

ahead? Suppose a planter who has no horses or mules, or cattle or hogs, or sheep to buy, having raised enough for his own use and some to sell, who has raised all his grain, whose dairy gives him a plenty of butter, and who has packed away in bags a fine clip of wool, whatever crop of cotton he makes is clear profit. He can sell or hold as he pleases. And suppose his cotton crop is a failure or prices rule low, what does he care? He has other things to sell, and then, greatest of all blessings, he has no need to run in debt. He has all he needs and to spare. He has no interest to pay. He is not obliged to sell his crop before he makes it, and become the anxious, tolling serf of the money-lender who advances the money.

INDEPENDENCE.

For the Southern Farm and Home.

Mutton versus Bacon.

MR. EDITOR—Could we not kill two birds with one stone—raise our own meat and improve our land, if we were to raise sheep upon our farms more than we do?

I know that mutton is not a favorite article of food with our people, but I believe that if they would eat more of it and less of fat bacon, they would be stronger, healthier, and less liable to inflammatory disease.

I can understand how a people living in a cold climate prefer very fat meat, because it is necessary to supply the carbon to maintain animal heat. We know the Laplanders drink train oil, and the Russians will eat tallow candles with a relish, but we cannot understand our people living in our warm climate making fat bacon their principal animal food. Mutton is the cheapest, most nutritious and consequently the most wholesome food we can eat. I think that it is Liebig who says, in his "Animal Chemistry," that the prize-fighters in England, when in training for their barbarous encounters, use mutton almost exclusively, never allowing the use of pork or bacon. It is not necessary to present at any length the other consideration, namely, the value of sheep as renovators of worn lands. That is not denied, I suppose, by any intelligent farmer.

Taking into account the small cost of keeping a sheep, the value of the wool and of the manure, and the meat is evidently the cheapest animal food that we can raise.

We cannot expect to see mutton introduced at once as a substitute for pork, but we may hope to see it used instead of a portion of the

pork which we eat. What I want is to mix mutton with our hog and hominy—to find a fine, fat, juicy leg of Southdown or Cotswold mutton on a farmer's table now and then instead of the inevitable fat bacon swimming in its own grease. Then, the economy being conceded, the sanitary advantage comes in. If we were to eat more mutton and less pork, we should be less liable to inflammatory diseases and less liable to dyspepsia.

NORVAL.

For the Southern Farm and Home.

Composting Cotton Seed.

MR. EDITOR—We all know that there is no better manure for corn or potatoes than cotton seed, but as they are ordinarily applied for either purpose, much of their fertilizing properties are wasted. They are generally thrown into a pile near the gin-house as the cotton is ginned, exposed to the weather all the winter, and after they are leached by rain and dried by sun and wind, carried to the field at planting time and a handful applied to each hill of corn. They have generally lost most of their ammonia when they are put in the ground, and consequently have lost most of their value. The best way to turn them to account and make them most valuable is to compost them with muck or woods-earth and land-plaster.

Build square pens of rails; strew at the bottom of the pen a thick layer of muck or rich earth, then a layer about two inches thick of cotton seed, then a layer of muck, and so on until the heap is sufficiently high, sprinkling a little plaster over each layer of cotton seed, and covering the pile with four or five inches of muck or soil. Instead of leaving the seed to rot by exposure, build the pens as the seed comes from the gin, and as many pens as you have seed to spare for manure. Thus when planting time comes there will be several heaps of the richest and best kind of manure, instead of a pile of comparatively worthless cotton seed, the ammonia of which has taken flight long before it is hauled out. I have used my spare cotton seed in this way for several years, and I have found them to pay me better than any commercial fertilizer I ever used for my corn. I tried them one year for cotton on a small scale and they did remarkably well, but I think they do better for corn than for cotton.

When the pens are opened for hauling, the cotton seed are completely rotten, and the whole forms a mass of black, rich manure, the

ammonia of which is easily perceptible by any one who has the faintest gift of smelling.

I have no doubt the compost could be greatly improved were the Charleston phosphates mixed with it. Say, a layer of earth, a layer of cotton seed and a layer of phosphate with a little land-plaster. In opening the pile, cut down from top to bottom as you would cut a hay rick. In this way all the component parts are well and evenly mixed in each load that is hauled out. A heaping stable shovelful of the compost is enough for a hill of corn, or if applied to cotton strew thickly, about as a negro strews cotton seed by hand for planting, in the bottom of the furrow, and then throw up the beds on this. I have tried this compost on sweet potatoes with wonderful results.

January, 1873.

HOMESPUN.

For the Southern Farm and Home.

To Prevent Rust in Wheat.

MR. EDITOR—I do not pretend to have discovered any “infallible remedy” for rust in wheat. I do not believe that any such exists, but I do think I have found a palliative which, like vaccination to smallpox, acts either as a complete protection, or renders the disease much less virulent and dangerous. Besides, it is easily obtained, costs little or nothing, and is of easy application. It is wood-ashes, leached or unleached, the latter preferable. During next month—February—is the best time to apply them. Just before a rain, on a still day, scatter over the field, as evenly as possible, about two bushels to the acre, and you will see the good results, both in the improved color and vigorous growth of the wheat, and in the diminished liability to rust. The same is true of oats. I do not understand, and therefore cannot explain the chemical causes of this. I only know the effects I have seen. As so many fine crops of wheat and oats are destroyed or materially damaged by rust, if there is any virtue in my remedy it is certainly worth trying—because, whether I am right or wrong as to the protection against rust, the ashes will certainly benefit the crop, as it is well ascertained they are a valuable fertilizer.

My experience fully bears out the correctness of the views I have seen expressed in the FARM AND HOME by some of your contributors—that where seed wheat is brought from a distance, the crop is much less liable to rust than where the seed grown on the place is used. It is now too late, however, to say any-

thing on this subject; but next month is the time to top-dress the crop with ashes, and I hope that many of your readers will try the experiment, and communicate the result through your columns, that the public may have the benefit of their experience.

WHEAT GROWER.

PRINCE EDWARD CO., VA., JAN. 8, 1873.

For the Southern Farm and Home.

Forage Crops.

MR. EDITOR—You cannot do a greater service to the farming community, than to urge them now in pitching their crop to make a liberal allowance of *good land*, for forage crops, lucerne, millet, drill corn and Hungarian grass. As a general thing we all run short of forage during the spring and summer, and our stock suffer. We have not yet reached the height of progress to see the inestimable value of clover. We may admit that it is a fine thing in theory, but very few of us experience its benefits in practice. The next best thing—indeed it is a good thing anyhow—is to have a plenty of soiling crops, that is, crops which can be cut green and fed to stock. Of those that are perennial, lucerne is by far the best and most profitable. The next best is millet, then drill corn, and then Hungarian grass. I may be wrong in my estimate of their relative value, but when I give advice, I should state my honest opinion. I have tried them all, and I would not be without a large patch of lucerne for any consideration.

Let nobody attempt to raise any of these crops on poor land. Devote to them the best land you have got. Prepare it thoroughly, cultivate well, and you will not think you have made any sacrifice, however devout a worshipper you may be of King Cotton. Be sure to procure good sound seed from a reliable dealer.

ROUGHNESS.

SPALDING CO., GA., January 6, 1873.

For the Southern Farm and Home.

The Remedy for Rust.

MR. EDITOR—People may say what they will about this and that remedy for rust, and talk of "rust-proof" seed, but I am well convinced that they are all mistaken, and that the only remedy is under or thorough drainage. I do not know whether rust is a "fungus growth," or a "parasite," or "an exuberance of sap." I know it is something that will slay a wheat crop, and that I never saw a crop

affected by it in the least that was grown on a well-drained field. I can see the sense of this and intend to test it practically on my own land. The loss of a wheat crop would cost me much more than several hundred yards of drains and drain pipe.

J. J. W.

NEAR CHARLOTTE, N. C., January 6, 1873.

For the Southern Farm and Home.

Patrons of Husbandry.—Granges.

MR. EDITOR—I hear with pleasure the spread over the South of the order of Patrons of Husbandry or Granges. This is a good move, but especially for the South. In one particular it could be made to save the planters of the South millions of dollars, and that is in getting a proper estimate of acres planted in cotton, and the probable supply of cotton for each year. If yours and other agricultural papers would urge the people in every township in the South to organize, then each town or grange could report to the State grange, and each State grange to a general grange, to be located at Memphis, or any other central point. By this means we could know with certainty the amount of bales to be sent to market, and then we could put a price according to supply.

The farmers and planters must organize or be trod under foot. The world is all ruled by rings. Why not the farmer protect himself by an order or ring? The merchant and traders have a ring that the farmer can never enter. The New York jobber only sells to the wholesale merchant, and he to the retail merchant, and he to the farmer. The merchants of the town allow the commission merchant a percentage on all he buys, and all these percentages are charged to the farmer.

Legislation is all for the good of trade, and nothing for the farmer.

The reason of all this is that the farmer never combines. All pull for self. There is no pulling together.

Urge the thing, General, and get the people to organize at once. Form granges in every county in the South, and at once.

Yours,

BROOMSEDGE.

ARKANSAS POST, ARK., Jan., 1873.

HELP THE CAUSE.—If every subscriber of the FARM AND HOME would show it to his friends and induce even one of them to subscribe, he would help the cause and double our present circulation. It will not cost much time or trouble.

From the Report of the Department of Agriculture for December.

Jute-Culture in the United States.

Experiments in cultivating jute in the Southern States thus far indicate that both the climate and the soil are well adapted to its growth, and there is a fair promise that its production will become an extensive and profitable industry in that section. Its fiber supplies material in manufactures for which there is a rapidly-increasing demand, and which, except to a very limited extent, does not take the place of cotton; while, therefore, it will not supplant the latter nor compete with it in the market, it may enlarge the area of profitable rural industry in the South. It is claimed that were the South to divide the labor it now bestows exclusively upon cotton between that and jute, the result would be an increase in the value of the cotton crop, it having been proved that, beyond certain limits, an increase in the product occasions a diminution in the total value; that it supplies the raw material for coarse fabrics, which are now largely imported by the cotton-growing States, but which might be manufactured by their unskilled female laborers at a saving of millions; that it can be raised and prepared for market at a greater profit per acre than cotton.

The following communication has been received from Mr. E. H. Derby, of Boston, who is an enthusiastic believer in benefits to result to the South, and so to the whole country, from jute-culture:

As the jute-plant has been acclimated in the Southern States, and I have exerted myself to aid in its introduction, many questions have been addressed to me from the South as to the culture and harvesting of the plant. I have consequently written to a friend in India, and subjoin extracts from his reply, which will be useful to the planter if published in your valuable report. I am convinced by this reply and by other letters from the South, that the rich lands of Florida, Louisiana, Texas and Mississippi, will, with fair cultivation, yield 3,500 pounds, or ten bales, of fiber to the acre, in place of one-tenth of that amount of cotton. I am convinced also that it can be produced at less than one-tenth the cost of cotton, that the caterpillar will not touch it, and that if planted around the cotton fields it may possibly protect them from that voracious insect. I am also led by my letters to hope that it will attain to its full growth in three to four months, and that the same field may yield two crops in one season. I have just returned from Scotland, where I visited the jute-factories in the flourishing city of Dundee, where the import and manufacture of jute is making wonderful progress.

The subjoined table gives in tons the import and manufacture of jute in that city since 1837:

	Tons.
In 1838.....	1,136
In 1847.....	6,966
In 1854.....	16,590
In 1872.....	96,000

Since 1854 the increase has been about 500 per cent., and in this interval of time the cotton manufacture has not grown at one-fifth of that rate. Some of the jute-yarn which I saw at the factories is spun very fine and sold for 8 or 10 cents a pound. It is used for bags and carpets, and some of the latter, handsomely colored, have sold for 16 cents per square yard. It is also interwoven with silk, linen, and woolen threads into cheap cloths.

By the subjoined extracts you will notice that the jute-seed from one acre will suffice to plant fifty acres, and that the plant is usually gathered some weeks before the seed ripens. I suggested this idea last summer to Mr. Chapman, of Point Coupee, but presume that most of our planters have this year allowed their seed to ripen, in which case they may have plenty of seed but inferior fiber, and possibly require the ramie-machine to separate the fiber from the stalk, and possibly thus make it available for coarse if not for fine fabrics. The progress of events convinces me that the jute is just what the South requires to diversify its industry and to fill up the gap when cotton is a failure. With the growing demand for it, jute promises to pay much better than cotton.

I noticed in the jute-mill at Dundee that after the jute was sorted a woman placed a layer of it on the floor, then sprinkled it freely, first with water and afterward with oil; she then placed another layer over that and sprinkled it in the same manner, and so piled up layer upon layer. This sprinkling was before the fiber was spun.

An extract from the reply above mentioned is given, as follows:

The quantity of jute and seed produced to an acre depends greatly on the richness of the land it is planted on. Serajgunge, Narangunge, Dacca, and other northeastern districts, where about four-fifths of the total crop are raised, produced from 2000 to 3000 pounds of jute on an average; in some cases, however, as much as 4000 pounds are produced. The yield of seed is about 1000 to 1200 pounds per acre. In the country fifty miles around Calcutta, the production of which is called dessee or country jute, the yield is smaller, being only about 600 to 1000 pounds of fiber, and more seed, say 1500 to 1600 pounds per acre; but on rich, damp lands the product is almost as much as in the northeastern provinces. The dessee description was used only for local consumption until about five years ago, when shipments of it to England began, and both the shipments and production of it are increasing every year. Jute is sown broadcast, and about 22 to 28 pounds of seed are required to an acre. In the northeastern provinces it is planted in February and March, and is cut about the end of

June and beginning of July; the dessee is sown in July and cut in August and September. On rich land it grows and ripens quicker. In the northeastern districts, when grown on rich soil, the diameter of the stalk at the bottom is from three-quarters of an inch to one and a quarter inches, and the length from 7 to 10 feet, and sometimes, but rarely, longer and thicker. The country jute is 4 to 7 feet long and one-half to three-quarters inch in diameter. The plants are cut about 3 inches above the ground, excepting dowrah, which is uprooted. The butts are cut at the time of baling the jute for export in Calcutta. When the stalks are cut they are covered with a green bark, which, after going through certain processes, becomes fiber. The planters cannot tell at the time of cutting the stalks whether any, or how far from the bottom any will be hard. The stalks are cut about a month before the seed ripens, and the poorer plants are generally let go to seed. Jute made out of the plants producing seed is hard and barky. The unripe seed cut with the stalks is of no use. It grows best on rich, moist ground, but not on low ground. Castor-oil cake is the best for it, and next to that cow manure; but the country planters, as the ground is naturally rich, use no manure whatever. An acre of cotton costs much more than an acre of jute. Jute and cotton do not interfere with each other in the least. Cotton grows in the northwestern provinces, Central and Southern India, while jute is raised in Bengal. The little cotton that Bengal produces, and the little jute the cotton districts produce, are of poor quality, and only raised for local consumption. For the last few years jute has been encroaching on the linseed crop, as the same ground is suitable for both.

The statements above answer, in part, the inquiries in the subjoined communication addressed to this Department by William M. Hazzard, of Georgetown, S. C.:

The cultivation of rice is attended with so many difficulties and risks, and such an outlay of money, with little or no remuneration, that we shall be obliged to abandon our lands, or introduce some plant less liable to the disasters to which a rice crop is exposed. From experiments I have seen made I am satisfied that our lands are well adapted to the growing of jute. This plant, whenever tried in the rice fields, has grown most luxuriantly. I have thus far failed in my efforts to obtain seed enough to plant three or four acres the coming year. I should be glad to obtain all the information the Department of Agriculture can furnish in reference to the time of planting, mode of cultivation, time for cutting, and mode of curing and preparing for market.

A correspondent at Charleston, S. C., reports that he planted jute seed June 10th, on very poor land, and October 1st the plants had grown to a height of 6 feet. That it can be raised at the South with success and large profit he has strong faith.

The following extracts from correspondents give the results of their own experiments in growing it:

Orange County, Florida.—I plowed up and thoroughly prepared a half acre of medium grade pine land, and sowed the jute in drills May 23d. It came up well, but owing to the excessively hot, dry weather it all dried up. On the same day sowed a small plat in a bay-head. It came up and grew finely. I am now gathering the seed. Some of it is 12 feet high, and all as high as I can reach, showing that on damp, rich soil it will here succeed finely. This bay-head is muck, several feet deep, which I cleared off and limed two years ago. Upon it bananas grow from 12 to 15 feet high.

Muscogee County, Georgia.—I consider the experiment in jute raising a success. The cultivation is simple and the cost of production small. I had seeds sown broadcast on broad beds; some on sandy river land, and the rest on stiff clay land. The latter did very much better than the former. The cultivation was the same, but many of the plants on the sandy soil died out after having attained their full growth, while those on the clay lands remained green and vigorous and matured their seed. The plant requires moisture. The seed was sown in May, and the plants could have been cut in September. A frost, on the 15th of October, which injured the cotton, did not leave its mark on the jute. It attained the height of 15 feet, and in appearance somewhat resembles a plantation of young peach trees before being removed from the nursery. I had the plants cut in October and steeped ten days in stagnant water, after which the fiber was easily stripped off.

New Orleans, Louisiana.—Jute seed received from the Department of Agriculture was planted on the 11th of April. The soil was well plowed and harrowed and in good condition. Patch No. 1, rich soil, 3 feet above ordinary gulf tide, planted in drills 3½ feet apart; patch No. 2, very rich soil, one foot above tide, planted in chops 4 feet by 2½; patch No. 3, same as No. 2, planted broadcast; soil very dry at planting. Seed covered one-half inch deep did not germinate until rain on the 22d of April. May 12. Passed the cultivator through patches 1 and 2. May 27. Chopped with hoe the large weeds from the same; jute 2 feet high; no further cultivation. Patch 3 received no attention after planting. Almost continuous drought this summer; jute suffered, but not so much as corn and other crops. July 10. Cut a portion of patches 1 and 2, 9 and 10 feet high; put the same in bayou water for seven days, and got beautiful fiber the entire length of the plant. July 15. Planted again the land which was cut on the 10th. At this date, October 10th, this second crop is 8 feet high, looking well, although it has suffered much from excessive drought. Wishing to save as much seed as possible for a more-extended planting the next season, I could afford but a fractional part of an acre on which to arrive at some idea of what amount of fiber we may expect per acre. On

the 28th of August I cut a portion of patches 1 and 2, plants measuring from 11 to 13 feet; seed-burrs about half grown. (This was in accordance with direction in Agricultural Report of 1871, page 172.) The quantity of fiber saved satisfied me that the yield of these patches would be quite equal to 4000 pounds per acre.

Patch 3, broadcast, is exceedingly dense and heavy; portions being matted with native weeds, it is impossible to make a reasonably accurate estimate of yield per acre.

Wishing to test the aquatic qualities of jute, I selected patch 2, as liable to overflow by heavy rain. The season being almost entirely without rain, I transplanted some of my July planting, when 2½ feet high, into water several inches deep. The plants have continued to grow finely, and are now looking well; this in a continuous flood of water for several weeks.

The above correspondent (F. W. Johnstone) states: "The seed we are now gathering appears larger than that planted—evidently improved. It takes just 600 of the Calcutta seeds to equal in weight 500 of the Louisiana." But it is quite probable that when the newly-gathered seed is thoroughly dry it will lose this excess in size and weight. Under date of October 22 he forwarded to the department three samples of jute-fiber, with a report, of which the following is an abstract: Sample No. 1 was cut four and a half months from sowing, when the most forward seeds were half ripe; No. 2, three months from sowing, when the first blooms appeared. This he thinks the best time, as at that stage female labor can do the cutting, and there being then only one quality of fiber, the expense of slow and tedious assorting and of cutting butts is avoided. No. 3 was from the second crop, planted July 15, and cut two months later. He further reports:

Some of the July planting, second crop, is now fully matured for fiber; some planted the first week in August will make a full crop, unless the frost is unusually early. Inquiries from South Carolina to California are being made of me for seed for next season. I have none to spare. Mr. Chapman, of Red River Landing, is asking \$5 per pound. He has two varieties, the pod-bearing and the burr-bearing seed. The pod-bearing variety he thinks much superior to the other. This he got, I think, three years ago, from the Department of Agriculture. The seed the Department sent out last spring was exclusively the burr-bearing, which is brown in color, while the pod-bearing is green. I have some plants which have been flooded constantly for two months, now seeding in 6 inches of water.

Charleston, South Carolina.—I have done what I could to encourage experiments with jute, and have distributed hundreds of packages of seed raised by myself. Experiments have been in the highest degree encouraging.

The plant seems to flourish quite as well as in India.

Mr. H. H. Stevens, of Webster, Worcester county, Massachusetts, a manufacturer of jute imported from India, to whom this Department sent a sample of that grown in Louisiana for examination, reports that in length, strength and color it is equal to India jute. He adds:

The Department should do all in its power, and, if necessary, ask of Congress more power and more money, to extend the culture of this fiber in the country. Twenty-seven years ago, in Dundee, Scotland, the question was, whether there was any value in jute. To-day, of an export from Calcutta of nearly, if not quite, 3,000,000 bales per annum, Dundee consumes a large share.

The Department has received from gentlemen in Louisiana and Georgia very encouraging accounts of their experiments, together with specimens of the jute-fiber which they have produced. Mr. Thomas H. Dunham, of Boston, to whom a sample was forwarded, writes as follows:

The quality is very superior. The market is just now depressed very much. Some parties here have lost heavily on imported jute-butts, and this season (before the fire) India goods were imported at immense loss. The present rate is 6 to 8 cents a pound, (gold); the usual rate 10 to 13 cents, (gold.) Your sample is very superior, and at 10 cents (gold) it would be safe to quote.

You will understand that our merchants do not favor home-growth of jute, or rather, make light of it; but my advice to you is, leave no step possible to push the jute growth; make every effort to get it raised here. Beyond and above all obstacles push it on. The country will sustain this to any extent. The motive is greater than you can have any idea of. The moment you get the growth started, you will be fully assured, as capital will follow quickly, as in cotton.

Suppose it were a new growth of cotton, no one would doubt the success, or the aid needed. Our growth of jute will nearly equal half the cotton crop. We can cut off India supplies, as we have done in cotton.

The interests of our merchants are so interwoven with India importations that they will (as they do) say, "You will never get any quantity grown," and make light of it. But your sample shows that its cultivation is feasible, and it must pay when the market changes. All orders to India are stopped now, and the revulsion will bring jute higher here, within the next year, than it has ever been.

NEVER lose an opportunity of seeing anything beautiful. Beauty is God's handwriting, a wayside sacrament; welcome it in every fair face, every fair sky, every fair flower, and thank Him for it, the flower of loveliness; and drink it in, simply and earnestly with your eyes; it is a charmed draught, a cup of blessing.

From the Columbus Democrat.

The Farming Interests of the South.

It is characteristic of all transition epochs, that those departments of life which should be most stable, are most unsettled and threaten complete failure. Of all the industries of the land, that which at present is suffering most, and which calls most loudly for reform, is the farming industry, upon which hangs most immediately the very life of a people. From all quarters is heard the complaints of the farmer. He is ground down by oppressive taxation, and this, together with the enormous rates he has to pay for the transportation of the produce of his farm, prevents him from making other than a bare living, and that by the hardest sort of labor. Numerically the strongest class, he is virtually weakest, for other classes have their organizations, which, with the blind selfishness of all organized bodies, unite in oppressing him. Impotent in matters of legislation, he sits passively acquiescent, giving his support to the very measures that involve his ruin. And so, unable to compete with the activities about him, he is discounted in the great business thoroughfares of life, and his occupation is become a grievous burden instead of being, as it should, the most noble, joyous and healthful of all human employments.

Wherein lies the remedy for the evil? What is to redeem the farmer from the terrible condition in which he is involved? The main trouble lies, we believe, with the farmer himself. In the complexities of modern civilization, he alone thrives who understands most thoroughly the business which he undertakes. **KNOWLEDGE** is the grand power in every department of industry, and he who fails to keep up with the scientific acquisitions of his age, is overrun and lost sight of in the struggle. As with the individual so with the class. Farming must be conducted upon scientific principles, and he who does not acquaint himself with these principles must suffer the consequences of his ignorance. It is just as necessary for the farmer to have a knowledge of the nature of the soil which he works, its chemical properties, etc., as it is for the physician to know the anatomy and physiognomy of the human body. While we have little respect for that intellectual sharpness engendered by the friction of the cities, yet the ignorance of farmers as a body, about what it most imports them to know, is greater than among any other class of people. *About what it most imports them to know:* we cast no reflections upon the *general culture* of the class, and we admit that many things concur in preventing that scientific culture which is so needful. A man who is harassed with the immediate and pressing necessities of life, has little heart for severe application to study. In truth the pressure upon the farmer, in the way of taxation especially, is well-nigh ruinous. May it not be that the enormous activity in the construction of railroads, while subserving the interest of our towns, is bearing down too heavily upon the country at large, and for an *apparent* prosperity

is sacrificing the *real* and *permanent* interest of the people? We are keenly sensible of the benefit which railroads are to a country—we want the best and speediest methods of locomotion, that there may be greater facilities for transporting the produce of the country, and a constant commingling of people of different and widely-separated districts, and an interchange of thought and sentiment—for it is only in this way that narrow, local prejudices are outgrown; but will the enlarged town and city life compensate for the depletion of the country? Is it not an apoplectic condition, as it were, a determination of the blood to the head, and consequent exhaustion of other parts of the system? We simply make this suggestion to those of our readers who are imposed upon by the show of life, who have not counted the cost of the show.

The difficulties which beset the farmer are aggravated in the South by negro labor. Here, scientific knowledge and modern improvements are often a disadvantage, for the negro will not be guided by the former nor use the latter to any extent. The light of experience flashes upon us the conviction that the liberation of the negro was not altogether a calamity, and the question of Southern national existence is narrowed down to the getting rid of him entirely. We believe that the establishment of a healthy *regime* upon the farm, will prove the solution of most of the political, industrial and social problems of our section. It is the policy of the political party in power to keep the negro element as largely predominant as possible, and to prevent that emigration which statistics prove is gradually taking it in a south-westerly direction. The constitution of the negro, his indolent, shiftless habits take him naturally to warm regions where sustenance is more easily procured, and if this native tendency were unimpeded, Mexico would soon receive these swarms of half humanized beings, and the South would be freed from the abomination. How shall we rid ourselves of this element? Most assuredly by a *gradual* process, and one which will tax the energies of the people to the very utmost. We are now so situated, both politically and socially, that we are liable to become bankrupt in all the virtues which constitute a people worthy of a national existence, and nothing but ultimate purity and integrity will save us from being absorbed by the evil around us. *Individual* reformation is the basis of all other, and accepting the present order of things, let us address ourselves to that development of character upon which depends our destiny. Let the large plantations be divided into small farms; the young men who fill the towns and cities to overflowing, who are compelled to degrade the highest professions into subserving the base needs of the body, who monopolize positions the duties of which could be more properly discharged by women, let them distribute through the country, take possession of the farms, and with plow and hoe come in close contact with nature, and gather from her strength and purity and cleanness of heart, health of mind, and vigor of body. In

this way, and in this mainly, do we look for the redemption of our section from its desolation. For while our towns are unhealthfully crowded, large plantations are abandoned to negro settlers who are ruining them by a careless and ignorant method of cultivation. Independent of them their labor will be gradually unsought by the farmer, and they will drift into more congenial regions. Our young men who have abandoned the country in disgust may regard these views as impracticable, but we hold it to be the only practicable course, and we beg them seriously to consider if honest, manly toil, even though the material compensation is small, is not nobler than to meet corruption with corruption and selfish greed with greed?—nobler to dig deep and build a solid house upon the enduring rock, than to erect a showy fabric upon the shifting sands? We are lacking in truth, in integrity, in honor, if we love not our native land, and devote to it our best energies; we are indeed deservedly verging upon ruin if we allow the sentiment of patriotism to be destroyed by any misfortune.

Cotton Manufactures at the South.

The following is from the Report of Mr. Palmer, of Saluda Mills:

"Among the advantages enjoyed by the South over the North in manufacturing cotton may be enumerated—

1. "Here the raw material is produced, and by working it here various expenses incidental to its transportation could be saved—such as profits made by those who invest capital, time, and labor in moving it from place to place; insuring during transportation; loss by samplings, and stealings from the bales.

2. "Experts claim that in our warm southern climate cotton works to better advantage, some estimating this advantage as high as ten per cent.

3. "Reclamation on false packed and damaged cotton is direct and easy.

4. "Freights on manufactured goods are less in proportion than on bulky and hazardous bales of cotton. Yarns can be delivered in New York from this vicinity for sixty to eighty cents per cwt.

5. "Abundant supply of operative labor at low rates and consequent exemption from strikes. Northern superintendents of southern mills admit the superiority of our factory hands (white), and the ease with which they are controlled. The average wages paid at the Saluda mills is \$142 82 per annum.

6. "The mildness of the climate enables the operatives to enjoy a larger proportion of comforts on a given amount of wages. In cold climates a larger proportion of carbonaceous food is requisite, which costs more than farinaceous food; nor do the houses for operatives require to be so expensive as in colder regions. Lumber of the best kinds costs only \$12 or \$15 per M. The short winters require less fuel. Land is cheap, and each household can have its garden, cow, and pigs.

7. "There is a home demand for the goods—the larger country stores keep supplies of yarn for sale as regularly as they do sheetings.

8. "By purchasing seed cotton from the planters and ginning it at the mill, the cotton is in a better condition for working than after it has been compressed into bales, and the expense of packing the cotton, bagging, ties, and handling would be saved, as well as the expense of running it through the picker. The wastage cotton undergoes in different ways has been estimated from one-tenth to one-eighth of the bale."

Scientific Department.

[From the American Farmer.]

Ashes and Lime.

We here take occasion to refer to the use of these substances. In an article upon the subject of Potash, we have shown the great value which is put upon ashes—and what we now would add, is the substance of some views which we presented in the *American Farmer* some years ago, upon the application of ashes and lime, and which we have lived to see most fully confirmed by the ablest chemists and the best farmers of the present day, both of this country and Europe. *M. Ville*, in his book, a notice of the translation of which we gave last month, gives the mineral substances of Acid Phosphate of Lime, Nitrate of Potash, Sulphate of Ammonia and Sulphate of Lime, as being necessary to form a *perfect manure*, and it will have been noticed that, according to his formula, the money value of the Potash salts is greater than either of the others, for the wheat crop.

The following is a table of the inorganic matter abstracted from the soil by a crop of wheat of twenty-five bushels to the acre:

	GRAIN.	STRAW.
Potash.....	3.3	0.6
Soda	3.5	0.9
Lime	1.5	7.2
Magnesia	1.5	1.0
Alumina	0.4	2.7
Silica.....	6.0	86.0
Sulphuric acid.....	0.8	1.0
Phosphoric acid	0.6	5.0
Chlorine.....	0.1	0.9
	17.7	105.3
		17.7
		123.0 lbs

The above substances, in the quantities named, are found to exist in the *ashes* of the straw and grain on one acre, the *organic* parts having been driven off by the effects of the fire, by which the grain and straw were reduced to ashes.

"The above substances, it will be seen, compose 123 lbs., in a crop of 25 bushels, and the straw from an acre—this may be considered a small amount, but still it is necessary that every substance named should be present in any

soil from which it is expected to grow a remunerative crop of wheat. To supply all of these, *ten* bushels of ashes—nay, *five*, would be more than sufficient, with the exception of the *silica*, and that the ashes would create, by dissolving the sand of the soil, by the agency of the potash, the lime, and the soda, which ashes contain, by forming the *silica* of the soil into a silicate, the form in which it is taken up by the roots of the plants. In ten bushels of hard wood *unleached* ashes, there are about 55 pounds of potash—in *five* bushels 27½ pounds, and whether we use the one quantity or the other, there will be found potash enough present to persuade the sand of the soil into a silicate state. Independently, however, of the *inorganic* materials to be found in the quantities, of *unleached* ashes named, all nutritive manures, whether of the barn or stable yards, or compost heaps, when judiciously made and properly cared for, besides the *organic*, contain the *inorganic* food of plants also to a greater or less extent.

"We have been speaking thus far of the elements which enter into a single crop of wheat, but, as in manuring, the progressive improvement of the soil should be looked to as the cardinal point of every farmer's system; the agriculturist should provide a supply for a full rotation, whether that be three, four, or six years. But we will here endeavor to impress this truth upon our agricultural friends—*ten bushels of unleached hard wood ashes* will, *directly and indirectly*, provide the *inorganic* food of plants throughout an entire rotation."

This estimate of the value of ashes is made without regard to wastage, and consequently as the quantities needed by single crops are small, all that is made should be saved under cover to preserve them from such waste.

As to *Lime*, all intelligent, correct-thinking farmers concur in opinion that this mineral is indispensable to every wheat soil. As to the *quantity* to be applied there is a difference of opinion; but so far as our judgment may be worth anything, our belief is that it is not so much to the *quantity* as to the *presence* of lime in the soil that the farmer and wheat-grower should look. Soils of great fertility—of great productive capacity—have been found to contain from less than ½ of 1 per cent. to 9 per cent. to the acre, estimating the depth of soil at 6 inches; the first would give about 150 bushels of the carbonate of lime to the acre; the latter rate, 2700 bushels. But then these soils had *all the other elements, organic as well as inorganic*, in them in corresponding quantities, so that the just equilibrium was kept up, and every variety of food present in which plants delight. These facts, if properly considered, will teach us the impressive truth, that it is the *presence of all the constituent elements* more than to the *quantity* of any particular one, which gives to soils their productive powers; and if we desire to profit by the only rational deductions to be drawn from it, we must come to the conclusion that it is not necessary to apply very large doses of lime to any soil, as

any one may be presumed to have more or less naturally in it.

The lime naturally existing therein is, of course, in the carbonate or mild form, and the addition of freshly slaked lime periodically, say at intervals of each rotation, will prove of infinite benefit, by infusing into the soil an active and efficient *leaven*, to prepare and utilize the inert vegetable matters of the soil for the use of the crops. For this purpose, 10 or 12 bushels per acre, at the commencement of each rotation, would be an ample quantity to supply all the demands of the crops, and allow for wastage from every cause. Of the value of the lime to the growth of the wheat crop, experiments in England of the most striking character have been made. Lands, known to be rich in every other element but lime, which produced almost every other crop in perfection and abundance, have refused to yield crops of wheat; *but, after application of lime*, they produced wheat in large quantities and of excellent quality. Cases of this kind are not isolated ones, but are of so frequent occurrence as to prove that the presence of lime in a soil is indispensable to its full fertility.

We have, for years and years, endeavored to correct the error of large applications of lime, because we looked upon such application as involving unnecessary expenditure of capital and consequent loss of interest, and we would here ask the agricultural reader to bear this truth in mind. The actual consumption of lime by crops in a four years' rotation does not exceed 3 bushels; allowance is, however, to be made for losses arising from other causes, as sinking into the subsoil as well as drainage. But even with these drawbacks, we believe that by the application of the quantities we have named at the beginning of each rotation, the absolutely necessary quantity of lime may be kept up in the soil; nay, that by such does a moderate addition to such supply will be the result of the practice.

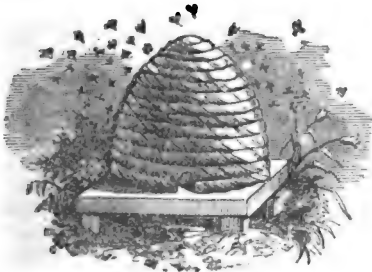
Oyster Shell or Stone Lime.—Either is good, but, weight for weight, we would give the preference to the former. "If the dose of lime to be applied is intended to last for a comparatively long series of years, we would graduate our *doses* thus: for *sandy land*, 20 bushels per acre; for *clay loams*, or *sandy loams*, rich in vegetable and animal substances, 25, 30 or 40 bushels per acre; for *strong clays*, rich in the remains just enumerated, 50 bushels per acre. In applying *marl* we would double the quantities, and invariably compost it with woods-mold, leaves, marsh mud, or any kindred substance.

"To prepare lime for *spreading*, slake with a strong salt brine, and apply it as soon as it falls into powder by sowing it over the land and harrowing it in. Keep the lime near the surface as much as possible, so that by each succeeding rain portions may be decomposed, sink and become diffused throughout the entire body of the soil, as its contact, its presence with the vegetable and animal matter in the soil, is necessary to insure its decomposing action." "In connection with the use of lime,

or any other alkaline manure, all lands should, in the course of a rotation, be seeded to clover and grass, to re-supply the material for forming *mold* abstracted by the crops grown. If this precaution is not observed, lime may prove a robber rather than an improver of the soil. Lime must be provided with the materials to work into manure—into food—organic as well as inorganic—for the plants—the conversion of the raw material into the food of plants being one of its most beneficent offices."

Such is the substance of remarks made in our journal twenty years ago upon the application of *ashes* and *lime*, and the experience of time and the acquiescence of the most eminent chemists and practical farmers have since then fully confirmed, as we conceive, the views then presented to the readers of the *American Farmer*.

The Apiary.



Commencement of Bee-Keeping.

EDITORS COUNTRY GENTLEMAN—Probably many farmers have at different times thought of the subject of bee-keeping, and been almost ready to try the experiment on a small scale. I would encourage them to make the experiment. If they will furnish sufficient force of workers to gather the honey produced in their fields, and restrict their force to this product, they may secure from hundreds to thousands of pounds annually, according to the extent and product of their fields. It may be proper to call their attention to this subject now, that they may have time for considering it, and be prepared early in the coming season. If, on reflection, it is thought best to make the trial:

1st. Determine with how many to begin—one, two or three swarms. If there are no bees kept within a mile, three or four may be safely placed in the yard.

2d. In preparing or procuring a hive or hives, endeavor to secure the following characteristics: A wintering and breeding apartment of 2000 cubic inches, or if a little more than that, all right. Have it so shaped for width and height as to admit 27 boxes, 6 inches square and 5½ inches high, directly upon the sides and top of the breeding apartment, with no partition between the comb and the boxes. This will give box-room for something over 150 pounds of surplus. If preferred, boxes of double or triple the size may be used, and have

but one-half or one-third the number. Agree with some bee-man to place a swarm in each hive.

In 1867 I took ten hives to a bee-keeper, to place a swarm in each. I placed only the top boxes, or side boxes without the top boxes, the first season. They cost me \$5 each—\$50 for the ten swarms. In the fall, when I moved them home, I took 318 pounds of white clover box honey, amounting, at 25 cents per pound, to \$79 50. Perhaps such a course would be attended with the least trouble. From one of those hives I have taken, in one season, 200 lbs box honey—in another, 143 lbs., and I think the average for 1867, '68 '69 '70 '71 and '72, has not been less than 100 lbs.—\$25 a year for six years, \$150, with no care or trouble, but simply to place on the boxes early in the season, and remove them as filled. This was my best hive. I know no reason why any farmer might not do as well with the same hive.

That different colonies of bees in the same kind of hive will produce some more and some less surplus in the same field, there is no doubt, and I think a mixture of the Italian with native bees is an improvement of the stock. The best I have ever done with native bees, was 174 lbs., of surplus from one stock; while my best Italian stock gave me 200 lbs. But it was in different seasons and fields, and determines not the question of preference with any certainty.

The ten hives I purchased were called Italians, but they varied in color from three yellow bands in one hive to very little show of the yellow bands in others. As the hive with three yellow bands proved queenless and perished, I reckon my stock of bees hybrids. My best hive I should think partook as largely of the native as of the Italian breed.

With my present views of the question, if I wished to increase my stock of bees or begin a stock by purchase, if I could procure Italians as conveniently as natives, and at the same price, I should take Italians; otherwise I should take natives rather than sacrifice much in trouble or expense.

The character and kind of hive in my estimation is a more important question than which kind of honey bees are secured. With the hive described, with either kind of bees a farmer, with an expense of some \$15 may secure from 75 to 150 lbs. of surplus honey per annum—say \$10 for hive and full suit of 27 boxes, and \$5 for a swarm of bees. An outlay of \$15 for the first year, and nothing after, and \$8 or \$10 worth of honey the first year, and \$25 worth per annum thereafter. And this result may be doubled, trebled or quadrupled, according to the season, field and outlay. But if it does one-half or even one-fourth as well as this, the farmer has his outlay returned over and again, with trifling care and trouble.

JASPER HAZEN.

An energetic divorce lawyer of Chicago has completed an arrangement with the county clerk to have his professional card printed on the backs of marriage licenses.



The Stock Yard.

For the Southern Farm and Home.

Care of Horses.

MR. EDITOR—During the prevalence of the horse influenza, I saw many of the so-called grooms "working on" the horses committed to their charge. They seemed to think that covering the poor fevered animals with dirty blankets was a panacea. They rarely rubbed, or cleaned them, and never rubbed or cleaned their legs. Indeed, at no time do the horses' legs receive proper attention. The "big dirt" is occasionally, not always, scraped off, but the legs are not rubbed, and the feet examined and cleaned, and hence many of the diseases which render valuable animals good for nothing. In the stables in England you may see boys rubbing the legs of the horses for hours, especially after they come in from hard work. The legs and feet are the first points that receive attention. And this is not true only of the race horses, hunters and fancy animals kept exclusively for show and pleasure, but it is the case with those splendid dray horses and plow horses, which every one who has visited England has admired in the cities and on the farms. It stands to reason that a horse with diseased feet and legs will soon become valueless—and how can they continue sound when they are never cleaned?

CLYDESDALE.

Care of Horses.

The feet and legs of the horses are the most difficult for the groom to keep in condition. Some horses get cold legs and require hand rubbing to restore the circulation; others become feverish in the feet and legs, and require wet bandages to relieve inflammation. Washing the legs in cold weather cannot safely be permitted, except they are thereafter rubbed dry. Cracked heels and swelled legs are a consequence of suffering the limbs to dry by the slow process of evaporation.

The grasses are the natural and most essential food of the horse. Turning out to grass

will prove a sovereign remedy for inflammatory diseases. It also relieves, and sometimes entirely removes, chronic disorders. Hard, upland meadow hay is preferable to lowland grass for trotting and running horses, eight pounds a day being about the usual allowance to fast workers. The draft, or slow working horse should have all the hay he will eat. Old oats are sweeter, more nutritious, and easier digested than new oats. They are the most profitable when one year old. The roadster in active service will consume daily twelve to sixteen quarts of oats. The draft horse will work on from ten to fourteen quarts per day.

Regular hours of feeding are as necessary as a liberal allowance of food. The fast horse must be fed often and in small feeds. The diver, boxer, wrestler, or runner must regulate his diet, to correspond with the active exertion required of his physical powers. Trotters get little food or water on trotting days; runners are muzzled, to prevent eating or drinking till after their race is over; for all work that materially forces the breathing, should be performed on an empty stomach. Young horses ought to be worked moderately, so as to gradually harden the flesh, enlarge the tendons, and develop a sound constitution. Overtasking the muscular powers before they are matured, tends to weaken the joints, relax the cords, and puff up the legs, from which they may never recover; and the soft, half-seasoned horse will take more food than those in good working condition.

When the work is such as to fall more severely on the legs than the body, they should be hand-rubbed, and the food must be so regulated as not to increase the inflammation. It is an old saying among horsemen, "Take care of the legs, and the body will take care of itself." Muscular exertion produces important changes. The motive power exists in different degrees, according to the state of the system. In one state it has a slow and feeble action, in another it has a strong and powerful action. The muscles are the active instruments of motion. They are put in force by the power of the will. Condition implies that state of the muscular system that confers the most strength, speed and endurance. Condition is the fruit of exertion, that clears the wind, quickens the action of the vital forces, produces perspiration, which purifies the blood and invigorates the body.—*Western Rural.*

Rasping Horses' Feet.

A correspondent of the *Canada Farmer*, speaking of this practice, says: Rasping down the feet nicely, as they call it, is quite a passion with some people. I have often rasped the hoof, and the owner of the horse standing by to tell when it would suit him. This rasping on a hoof that happens to be a little ill-shaped, until it will spring under your finger, is far too dangerous a plan for making things look well. I have often commenced on hoofs that had a beautiful gloss all over, and given them a thorough rasping; not that I could make them any better, for that was beyond the power of human hands, but they had to be rasped merely because the owner's mind was a slave to fashion or fancy. This rasping takes the strong surface off the hoof, and nature, trying all she can to make up for the evil done by injudicious hands, forms a hard, glossy surface to protect the foot. This glossy surface takes the place of the previous tough horn, and at the next shoeing the foot will probably split a little at the nails, and not unfrequently the nail punches a piece out before it.

Breed Walking Horses.

Whether for traveling or for farm purposes, a fast, even walk is the best gait for a horse, and with such an idea the *Rural World* gives the following advice for the production of fast walking horses: Breeders should pay attention to this matter. In selecting a stallion to breed from, by all means select one that can walk fast. A slow-walking stallion will be likely to get slow-walking colts; while the stallion that has a long, rapid, spirited stride, will be likely to beget colts of a similar action. Then there is a great deal in breeding to a horse with spirit and ambition. These cold-blooded horses will beget cold-blooded colts. The nearer you can approach the thorough-bred, even for obtaining a fast walker, the better. There is game there, and spirit, and endurance, and stamina, and style. There are the neat, bony heads and prominent eyes, the small ears, the capacious nostrils, the large lungs and chests, the well-developed muscles, the bones as dense as ivory. Even for walkers, then, get the nearest to thorough-bred possible, and the same for trotters, and of course, the same for runners. You have then horses fit for any company, and for any purpose—to haul the plow, or buggy, or carriage, or to carry you upon their backs.

Breed large, fine mares, to thorough-bred horses, and you will get colts that you will not be ashamed to have your friends see.

How to Improve Dairy Stock.

If dairymen could, by some process of culling, without the enormous expense of keeping the culls till four or five years old before finding them out, get up herds of the *best* of the natives, that process would answer their more immediate purposes, no doubt; for it must be admitted that there does occasionally crop out a very choice milker among them, and that many of

them are above the average of any class of pure-bred animals as milkers. It is a remarkable fact, however, that the progeny of such cows are not much more likely to be good feeders or good milkers than the progeny of any other cow in the herd, showing conclusively that their milking qualities are merely accidental and not inherent. The question very naturally arises,—is there any reason why the dairyman should go plodding on in this uncertain way? Does not the experience of every dairyman who has tried the experiment of raising pure-bred and high-grade cows for the dairy, and feeding the calves of such, indicate with unerring certainty the more profitable course?

We do not recommend that dairymen should discard their present stocks and go at once and altogether into the rearing and keeping of pure-bred animals of any breed. Such a course would require the investment of more capital than is at the command of most, even well-to-do farmers; and the limited supply of pure-bred animals would render such a course impracticable.

We would, however, most earnestly urge every dairyman to use none but pure-bred bulls, and to grade up as rapidly as possible, until his stock, in the words of Lewis F. Allen, "for all economical uses is just as good, except for thorough breeding," as the pure-bred. If he desires to indulge his taste for fine animals, to take occasionally a premium at the fairs, and to sell his surplus stock at fancy figures, he may stock up more or less rapidly, as circumstances will permit, with fine, pure-bred cows, and find his profit in so doing.

The most serious question connected with this whole subject is what breed to adopt. The mass of thinking and observing farmers and dairymen do not now consider it an open question whether or not the adoption of some pure breed is desirable, and large numbers of them are delaying only to decide in their own minds which is the better breed for them. Each of the different breeds has its advocates, and, as in everything else, those are most sanguine whose real knowledge is confined to the breed in which they are most interested. There are also many varying influences, such as pertain to soil, climate and treatment, that should be, but are not always taken into account in determining the relative values of different breeds.

MERITS OF THE AYRSHIRES.

Leaving all these out of the case, and coming down to the real question of abstract merit for general dairy purposes, the argument seems to be nearly all upon the side of the Ayrshires. They have, more than any others, been bred especially for the dairy; and they possess more of the qualities desirable to a dairy breed for general purposes than any other. It matters but little what may have been their origin, the fact that they are thoroughly inbred and capable of transmitting their desirable qualities with great uniformity, is admitted by friends and foes alike.—O. S. Bliss, *Live Stock Journal*.

The Poultry Yard.

Partridge Cochins.

In this breed the cocks should have bright red hackles and saddle feathers, with a well-defined black stripe down the middle of each feather, the back and wing-bow of a dark, rich red, with a wide, lustrous, greenish-black bar across the wings; the quills should be rich bay on the outer webs, the secondaries ending in black tips; the tail should be glossy black. Not unfrequently, however, some white appears at the base of the feathers. This is regarded as objectionable in a show-pen, but not a disqualification to prize-taking. Fashion demands a black breast in a Partridge Cochin cock, mottled-breasted birds being disqualified, according to the *Standard of Excellence*, as exhibition birds. The Partridge Cochins originally imported had brown breasts, resembling the brown-red game cocks, and they much more closely resemble brown-red than black-red hens. The judges, however, demanded black breasts in the cocks, consequently, such birds were bred by crossing a partridge-feathered cock with a black Cochin.

In the Partridge hens the neck-hackle feathers should be bright gold, each having a broad black stripe down the center. The remainder of the plumage should be light-brown, well and distinctly pencilled with dark-brown. It is an important point that the pencilling should reach well up the front of the breast; the shafts of feathers should be creamy-white, contrasting pleasantly with the darker colors of the webs of the feathers.

These fowls are of an extremely quiet and domestic disposition. A very low fence, three or four feet high, prohibits their straying, hence their advantage. When the range appropriated to them is scanty and confined, they are very hardy, if not over-fed. The chickens are raised without any difficulty, and undoubtedly they are one of the best varieties for laying eggs in winter, if properly managed. The best plan is to obtain some strong, well-grown pullets that will commence laying about November. Let them be comfortably housed at night, where they will be but little exposed to the weather, and be allowed to have access, at pleasure, into the same building in the day time; they will avail themselves of this in case of storms.

They should be liberally supplied with food and have the advantage of a good run, for they, like all Cochins, consume a larger quantity of grass than almost any other variety of fowl, a circumstance which lessens the expense of keeping considerably.

It is well known how much more valuable eggs are during mid-winter than in the height of summer, whether we view them as matters for sale in general market, or simply for home consumption. Therefore, the advantages to be attained by production of eggs in winter will be easily acknowledged, and need not be further insisted upon. Cochins of all kinds are remarkably free from liability to that pest of the poultry yard known as roup, and as chick-

ens, are as hardy and less liable to disease than any other variety whatever.—C. H. CROSBY, in *Poultry World*.

Geese.

In mating geese, three or four should be put to each gander, and not more than this, if the object is to breed from the eggs. Set them early in the season, for a larger proportion of vigorous young will be obtained from the earliest broods.

When the goslings are hatched, shut them up at once with their mother, lest they get at the water and become wet, as in that case many of them are sure to die. Feed them, while in the coop, with fresh, tender grass, cut fine, chopped cabbage and a small quantity of dough made from corn meal. Supply them with water in a shallow pan.

When they are three weeks old, they may be let out, if the weather is fine, and after this they are to be fed with only a little meal twice a day, for which grain in the kernel may be substituted at the age of six weeks.

Grass is as much their natural food as it is that of the cow, and as soon as they are let run, they will take to it. However, the tamed Canada goose and the long-necked Chinese goose depend less upon grass, finding much of their food in marshes and shallow water. All kinds of fowls eat grass, but none make so much use of it as the goose.

In the winter, the supply of grain must of course be greatly increased, but it should be accompanied by some form of green fodder. Apples are useful, one being allowed daily to each bird; the cheaper sorts may be stored in autumn for this purpose. Rowen, cut fine, well soaked during several hours, and sprinkled with meal is a valuable article. Bulk may be obtained by using whole or ground coarse bran and oats.

An important point in deciding upon keeping geese is the advantages of the locality. They must have water for swimming and drinking, but their range upon this should be confined, or they will swim away and forage in your neighbor's mowing lots. Geese are very destructive to grass, eating some and trampling down a great deal more. They should have a pasture to themselves, and can be shut in with a fence, tight near the ground. They will not generally fly more than four or five feet up, and if disposed to go higher than this, their wings may be clipped. Yokes are abominably cruel contrivances.

Geese are hardy, healthy, and pay good returns, and their value is annually increasing as fewer and fewer, relatively, are kept.

In fact, all feathered farm stock, hens, ducks, geese, turkeys and Guinea fowl, are more profitable than quadrupeds, provided they can be kept in such a way as not to do mischief, and are managed skillfully, so that tending them shall not involve too much work: that is, the produce of no species of four-footed farm stock will so much exceed the value of food consumed as will poultry.—H. H. Stoddard.



The Vegetable Garden.

All who appreciate the value of a good and well-stocked vegetable garden must now be up and stirring. There is a great deal to be done this month.

If the soil has not been already well prepared and liberally manured, that is the first work in order. It is essential to early and juicy vegetables. Plow or spade the ground deeply. Spread the manure broadcast, and do not try to make the least possible manure cover the greatest possible surface, but scatter thickly, so that you cannot see the surface soil. Then fork it in with a spade-fork so as to cover it, but not too deeply. The practice of manuring garden vegetables in the drill is as unwise as it would be to feed a yearling colt on the richest food and starve him when he is a two or three year old. Apply the manure broadcast so that the roots as they grow and spread will find nourishment wherever they reach. All early vegetables are greedy feeders to supply the quick growth. Starve them and you will have stunted vegetables.

ASPARAGUS.—This is a good time to make a new asparagus bed, or to sow the seed to raise plants. Sow the seed in drills fifteen inches apart, at intervals of four inches in the drill, and cover about one inch deep. Keep the bed perfectly clear of weeds and grass. The plants will be fit to move next year.

BEETS may be sown now in light rich soil, in drills fifteen or sixteen inches apart. Sow thinly (about three inches between the seeds.) When sufficiently grown thin the plants to a foot apart. The beet seeds will sprout more quickly if they are soaked in water for a couple of days before planting.

CABBAGE—Sow the early varieties either broadcast in a seed-bed or in drills about

twenty-four inches apart. Keep the soil light, give the plants plenty of room—fully eighteen inches each way—and stimulate with weak liquid manure or soapuds from the laundry.

CARROTS.—Sow thinly in drills about a foot apart, and when large enough thin to eight inches between the plants. It is useless to sow carrots unless the soil is deeply broken.

CELERY.—Sow very thinly in drills, cover about half an inch, and press the soil about the seed with a plank. When the plants are two or three inches high thin to a foot apart in the drill, and when they are five or six inches high the work of blanching may be begun by drawing the earth toward them, leaving the crown-bud above the soil, and repeating this work as they increase in growth. The raising of plants in a hot-bed and transplanting in trenches is exploded by modern gardeners.

CRESS.—Sow in drills a foot apart, or along the borders of beds and cover lightly.

LETTUCE.—Sow in drills, and when well up thin to a foot apart. Keep the soil loose and clean, and stimulate so as to make the growth as rapid as possible. It is the stunted, slow-growing heads of lettuce which produce the narcotic effect so often complained of.

MUSTARD.—Sow in drills upward of a foot apart. When the plants are sufficiently grown thin to ten or eleven inches.

ONIONS.—To have the best onions they must be raised from the seed. Sow now in very rich mellow soil in drills fifteen inches apart and four or five inches between each seed. Cover about half an inch and press the earth round the seed by a plank, as already recommended for celery. When the plants are well up thin to ten inches apart. Soak the seed for a day before they are put in the ground. Be sure not to sow the seed thickly, as the thinning process injures the plants that are left. Cultivate very shallow so as not to cut the roots. Fowl-house manure is well adapted for onions. We strongly recommend our readers to make the experiment to raise their onions from seed

We have done it frequently, and if the seed is planted now in very rich, light soil and cultivated as directed, fine large onions can be gathered in July, which will keep much better than those raised from buttons or sets.

OKRA.—Sow in drills eighteen inches apart, and cover from one and a half to two inches deep.

PARSLEY.—Sow in drills or in borders. The seed germinates very slowly, therefore it is well to soak it for a couple of days before sowing.

PARSNIPS.—Sow in drills fifteen inches apart in rich, deeply-pulverized soil, and when well up thin the plants to eight or ten inches.

PEAS, ENGLISH.—Sow the early varieties now thickly in drills far enough apart to leave room to stick and a path to gather the pods. When six inches high is the time to stick them.

RADISHES.—If radishes are to be grown at all, which we doubt, now is the time to sow the seed thinly in drills eight or nine inches apart and half an inch deep.

RHUBARB, OR PIE-PLANT.—This is a delicious and wholesome plant which ought to be more cultivated than it is in Southern gardens. Sow the seed in a cool and moist location, in exceedingly rich soil, about one inch deep. Keep the young plants clear of weeds and the earth mellow about them, and next year the stems will be fit for the table.

SALSIFY.—Sow in drills and cultivate like beets.

SPINACH.—Sow in drills a foot and a half apart, and thin to eight inches between the plants. Select a moist spot for the spinach bed. It is the most delicious of the early greens if raised on very rich ground.

TURNIPS.—The early varieties may now be sown in drills eighteen inches apart, and when well up thin to eight inches in the drill.

TENDER VEGETABLES, such as tomatoes, egg-plants, peppers, &c., should be sown now in the hot-bed, so that when the ground is warm enough the plants will be ready to set out.

LIST OF VEGETABLES.—For the convenience of beginners, or for those who desire to save themselves the trouble of preparing a list of garden seeds, we republish the following, which appeared in the *FARM AND HOME* last spring; in which the quantities of each variety are given for a garden of half an acre:

Asparagus.—Conover's Colossal, 2 papers.

Beans (Bunch).—Early Valentine, Early Mohawk, Wax, 2 quarts.

Beans (running).—Large white Lima, 1 quart.

Beets.—Early Bassano, Early Blood Turnip, 1 quart.

Broccoli.—Purple Cape, 2 papers.

Cabbage.—Early York, Winningstadt, Wakefield, Sugar-loaf, 5 papers.

Carrot.—Early Horn, Altringham, Long Orange, 1 quart.

Cauliflower.—Early Walcherer, Erfurt, Early White, 2 papers.

Celery.—Red White, White solid, 2 papers.
Corn.—Adams's Early, Russell's Prolific, 1 quart.

Cress.—Peppergrass, Fine Curled, 1 paper.

Cucumber.—Early Russian, Early Frame, 4 papers.

Egg-Plant.—Early Long Purple, 2 papers.

Lettuce.—Malta Drumhead, Victoria Cabbage, Curled Silesia, White Paris Cos, 4 papers.

Melons (Water).—Mountain Sweet, Mountain Sweet and Orange, 6 papers.

Melons (Cantilope).—Pine-apple, Netted Green, Jenny Lind, Prolific Nutmeg, 4 papers.

Okra.—Long Green and Dwarf White, 2 papers.

Onions.—Weathersfield Red, Danver's Yellow, Silver-skinned, 3 papers.

Parsley.—Giant Curled, 1 paper.

Parsnip.—Hollow Crown, 4 papers.

Peas (English).—Carter's First Crop, Tom Thumb, McLean's Little Gem, Blue Imperial, Champion of England, Dwarf Waterloo Marrow, 3 quarts.

Pepper.—Large Bell, Long Cayenne, Long Red, 3 papers.

Potatoes (Irish).—Early Goodrich, Early Rose, 1 barrel.

Pumpkin.—Cushaw, Large Cheese, 2 papers.

Radish.—Long Scarlet, Short Top, Rose Olive-shaped, White Olive-shaped, Red Turnip and White Turnip, 4 papers.

Spinach.—Round or Summer, New Zealand, 2 papers.

Squash.—Early Bush, Crook-necked, Early Bush Scollon, 2 papers.

Tomato.—Keye's Early Prolific, Tilden, Early Smooth Red, Fejee, 4 papers.

Turnips.—Red Top, Early White Dutch, Norfolk, White Rutabaga, 4 papers.

Sweet Herbs.—Sage, Caraway, Summer Savory, Sweet Marjoram, Thyme, Sweet Basil, 1 paper of each.

The Orchard.

This is a busy month for the fruit culturist. Examine each tree carefully, and if insects are found hiding themselves under the bark, remove and kill them. Wash the trees so infected with strong ley. Dig round the roots and enrich with a compost of woods-earth, ashes and bone-dust. Now is a good time to graft the apple, pear, peach and plum. No time should be lost in pruning grape-vines. Set out new strawberry beds, but do not expect any fruit from them this year. Plant raspberries and prune the old bushes. Grapes may now be grafted on the root in fine weather. The best manure for grape-vines is bone-dust.



THE GLADIOLUS.

The Flower Garden.

Fair readers, spring is almost at hand. Are you ready for it? Have you made your plans for your flower yard, procured your bulbs, seeds, shrubs, &c., and have you your ground prepared and enriched? If not, lose no time. Plant out at once the gladiolus, the lilies, the amaryllis, the dahlias and the peonies. Prune the rose-bushes and train the climbers. Plant out cuttings of all kinds. Continue to sow hardy annuals in appropriate places, where they will produce the best effects, regard being had to their size and color. Finish planting out shrubs, both evergreen and deciduous. Sow the tender and half-hardy annuals in boxes or frames covered with glass. Apply none but thoroughly-decomposed manure to the flower-beds. Flowers do not need to be actively stimulated. Fork charcoal dust round the roots of the roses. It will add much to the luxuriance and color of the blooms.

Hot-Beds and Cold-Frames.

These are indispensable adjuncts to any well-regulated garden; but although easy of construction, everybody does not understand their management, and fail to receive the benefit they bring to our garden operations. There is, however, a vast difference between a hot-bed and a cold-frame; the former is so constructed as to give bottom heat and hasten the growth of seeds or plants; whereas, a cold-frame is intended to protect half-hardy plants during winter and to gradually harden off young

vegetable plants taken from the hot-bed before setting out in open ground. From this general definition, it is evident that both are needed in growing many kinds of early vegetables.

Hot-beds may be constructed of any size, but for a garden of a half acre, three sashes three feet wide by six long will answer. Select a sheltered situation, and where the sun can reach it fully. Dig a pit at least six inches wider than the frame which is intended to be placed upon it. The depth may vary from two to four feet. We prefer it two feet deep, and to build up the sides three feet above ground on one side and two feet on the lower, the earth taken from the pit to be banked against the sides. Make a frame of inch-and-a-half boards, of such size as will allow the sash to fit; nail a cleat at the lower end of the frame, to prevent the sash from sliding off when raising the upper end, and this is all the material required in building a hot-bed that will last two or three years. When the structure is intended to be permanent, the cheapest plan is to build up the sides with a brick wall, and the pit made three feet in depth.

The material to fill up the bed may be composed of fresh stable manure or a mixture in equal proportions of oak leaves and fresh manure. It is desirable to mix this compost, and allow it to remain on a compost heap for a week, when it will be ready to go in the bed. The manure bed must be not less than three feet deep; in three or four days it must be covered with six inches of good garden soil, and when the whole is well settled, seeds can be sown. As some plants may need more ventilation than others it is advisable to divide the frame with a partition under each cross-bar which supports the sash. Ventilation must be carefully attended to, night and day, especially

when the bed is newly made, as there is danger to be apprehended from the escape of rank steam from the fresh manure. Provide some cotton bagging, to shade the sash during bright days, and to protect the beds during cold nights. As plants grow, increase the ventilation to prevent them from becoming drawn and weak. When the young plants have attained a height of two or three inches, they should be planted in a cold-frame, where, after a couple of weeks they will become stocky and hardened, and be ready for the open ground. *Cold-frames* are made by placing a frame upon a bed of rich, light garden soil, the frame covered with sashes, as the hot-bed. By using the cold-frames, tomatoes, peppers, egg-plants, etc., can be sown in hot-beds, end of January, and young plants will be ready for the former by end of February. They may be left in frames until all danger of frost is passed, when they will be much stronger and grow off much more readily than when transplanted from the hot-bed to the open ground. *Cold-frames* must have their sashes covered with cotton bagging or mats during cold nights, and air given freely during the day.—P. J. BERCKMANS, in *Farmer and Gardener*.

Household Department.

Domestic Receipts.

CHICKEN AND HAM PIE.—Cut two chickens into joints, season them with salt, pepper, and cayenne pepper, a little powdered mace and a tablespoonful of chopped mushrooms. Then make balls of forcemeat and the hard-boiled yolks of eggs, and lay them in the dish between the joints of chicken, with a few slices of lean ham in between, and add a little water with a mushroom boiled in it; cover with puff paste and bake.

COLCANNON.—This popular Irish dish is usually made with cabbage and potatoes, but cauliflower will make a more delicate dish. Take half as much cauliflower as potatoes, both of which must have been boiled previously and completely cooled. Chop them separately and very fine. Put a little milk and butter into a saucepan, and when boiling hot, turn in the potatoes and cauliflower well mixed together. Place a flat tin or dish over them, and let them warm through. Then remove the cover, and add salt and pepper to the taste; make the dish boiling hot, and serve. Another way is to prepare it with strips of salt pork. Cut the pork into strips an inch long and as narrow as possible, and fry it to a crisped brown; then turn in the chopped cauliflower and potatoes, and mix well with the pork strips and fat. Heat very hot, and serve on a platter. It is a delicious dish; and a little vinegar is considered an improvement to it.

NEW WASHING PROCESS.—The injurious action of soda upon linen has given rise to a new method of washing, which has been extensively adopted in Germany, and has been introduced in Belgium. The operation consists in dissolv-

ing two pounds of soap in about three gallons of water, as hot as the hand can bear, and adding to this one tablespoonful of turpentine and three of liquid ammonia; the mixture must then be well stirred, and the linen steeped in it for two or three hours, taking care to cover up the vessel which contains it as nearly hermetically as possible. The clothes are afterward washed out and rinsed in the usual way. The soap and water may be reheated and used a second time, but in that case half a tablespoonful of turpentine and a tablespoonful of ammonia are then to be added. The process is said to cause a great economy of time, labor and fuel. The linen scarcely suffers at all, as there is little necessity for rubbing, and its cleanliness and color are perfect. The ammonia and turpentine, although their deterrent action is great, have no injurious effect upon the linen; and while the former evaporates immediately, the smell of the latter is said to disappear entirely during the drying of the clothes.

TO MEND CHINA.—Take a very thick solution of gum-arabic in water, and stir into plaster of paris until the mixture becomes of the proper consistency. Apply it with a brush to the fractured edges of the china, and stick them together. In three days the article can not be broken in the same place. The whiteness of the cement renders it doubly valuable.

CLEANSING BLANKETS.—It is quite as important to have the blankets on our beds clean as to have the sheets pure and white. The foul emanations which they absorb in time make the bed anything but sweet. The *Boston Journal of Chemistry* gives the following method of cleansing blankets: Put two large tablespoonfuls of borax and a pint bowl of soft soap into a tub of cold water. When dissolved, put in a pair of blankets, and let them remain over night. Next day rub and drain them out, and rinse thoroughly in two waters, and hang to dry. Do not wring them.

But this is not the only domestic use to which borax may be put. Says the same journal: Borax is the best cockroach exterminator yet discovered. This troublesome insect has a peculiar aversion to it, and will never return where it has once been scattered. As the salt is perfectly harmless to human beings, it is much to be preferred for this purpose to the poisonous substances commonly used. Borax is also valuable for laundry use, to about ten gallons of boiling water, and you need use only half the ordinary allowance of soap. For laces, cambrics, etc., use an extra quantity of this powder. It will not injure the texture of the cloth in the least.

For cleansing the hair, nothing is better than a solution of borax water. Wash afterward with pure water if it leaves the hair too stiff. Borax dissolved in water is also an excellent dentifrice, or tooth-wash.

THE most anxious mothers in Duluth think that ice fourteen feet thick is safe enough to let their little boys go skating.

The Southern Farm and Home.

MEMPHIS, TENN., FEBRUARY, 1873.

WM. M. BROWNE, - Editor and Proprietor.

BOYLE & CHAPMAN, - - - Publishers.

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

THE DEATH OF NAPOLEON III.—However opinions may differ in estimating the character of the deceased Emperor, all must admit that he was a great man, not because he wore a crown, but because he possessed a great intellect, great courage, and a great will. His life presents a wonderful panorama of vicissitudes, and of what the world calls extremes of adversity and prosperity. See him as the baby born in the Tuilleries in 1808, with the grand cross of the Legion of Honor placed in his cradle by his uncle Napoleon the Great, then in the zenith of his power and his glory. See him grown to man's estate, a poor adventurer in an obscure lodging in London. See him as the leader of the "crazy escapades" of Strasbourg and Boulogne, the object of universal ridicule because the expeditions were unsuccessful. See him as the prisoner in the fortress of Ham. See him again a penniless exile in the outskirts of fashionable society in London. See him as Prince President of the Republic in 1848, as self-constituted Dictator in 1851, and as Emperor of the French "by the grace of God and the will of the people," in 1852. See him as the arbiter of the nations of the Old World, humbling the Czar Nicholas at Sebastopol, defeating the Austrian Kaiser, conquering the Lombardo-Venetian Kingdom at Solferino and Magenta, and liberating Italy "from the Alps to the Adriatic." See him also, for upward of twenty years, ruling France by the unaided force of his own will, no one daring to disobey his behests, his country quiet, prosperous and respected.

See him again at Sedan, a fugitive from the wrath of his own army, seeking refuge within the lines of his enemy. See him as the prisoner at Wilhelmshöhe, and finally see him as the exile of Chiselhurst. The Ex-Emperor was the only son of Louis, King of Holland, brother of the great Napoleon, and of Hortense

Beauharnais, daughter of the Empress Josephine. He was born April 20, 1808, and died at Chiselhurst, Kent, England, on January 9, 1873. In 1848, he was elected President of the French Republic. In 1851, on the 2d of December, by his famous *coup d'état*, he dissolved the assembly, imprisoned the obnoxious members, and assumed dictatorial powers. In November, 1852, he was elected Emperor, and next year married Eugenie, Countess of Teba, by whom he left one child, born in 1856—Napoleon Eugenie Louis—now called by the Bonapartists "Napoleon IV."

DEATH OF LORD LYTTON.—By the death of Edward Bulwer Lytton, Lord Lytton of Knebworth, England has lost her greatest novelist, and the most versatile writer she has known since the days of Oliver Goldsmith. As a poet, novelist, essayist, dramatist, parliamentary orator and statesman, Bulwer acquired a fame which will endure while the English language is spoken. No other writer since Walter Scott has left so many works which public opinion has stamped as "classics." From his first novel, "Pelham," to his last, "A Strange Story," including "The Disowned," "Devereux," "Paul Clifford," "Eugene Aram," "Godolphin," "The Last Days of Pompeii," "Rienzi," "Ernest Maltravers," "Night and Morning," "Alice," "Zanoni," "The Last of the Barons," "The Caxtons," "My Novel," and "What Will He Do With It," his writings, though varying widely in character as in purpose, have been universally pronounced the best of their day. For nearly half a century ("Pelham" was published in 1827) he has held the highest place in the world of letters. Of the great trio of English novel writers—Bulwer, Dickens, Thackeray—the oldest has been the last to depart, leaving a void which none of those they have left behind can ever fill.

Bulwer was born in May, 1805; was created a Baronet in 1838; and after serving in Parliament for many years and occupying various posts in the British Cabinet, was elevated to the peerage as Lord Lytton, in 1866. He died January 18, 1873.

THE NATIONAL AGRICULTURAL CONGRESS, which met in St. Louis last May, and did so much to promote the organization of farmers' clubs, and an appreciation of the value of co-operative action among those who make agriculture their profession, is announced to hold

its next meeting in May, at Indianapolis, Indiana. We trust that every State in the South will be represented there by delegates from the various agricultural societies. For fuller information apply to Chas. W. Green, Jackson, Tenn., Secretary of the Congress.

AGRICULTURAL SCHOOL.—We are glad to learn that the East Louisiana and South Mississippi Agricultural and Mechanical Fair Association are about to establish an agricultural school and experimental farm at or near Osyka. This is a commendable enterprise, and should engage the interest and support of all classes of the people in that section of the country. It has our heartiest wishes for its success.

BACK NUMBERS.—We constantly receive letters asking for back numbers of the first volumes of the FARM AND HOME. We regret that we are unable to furnish them. Our increasing circulation has long since exhausted our supply of numbers of the first and second volumes. We have on hand a few sets of the third volume which we can furnish at \$2, or neatly bound for \$3.

Mr. Howard's Manual of the Grasses, &c.

This able and comprehensive work which has appeared serially in these columns, and has been so generally commended by the press and the agricultural public, has been published recently in pamphlet form, so as to bring its valuable information and admirable teachings within the reach of all our planters and farmers. It is, beyond question, the best work on the grasses and forage plants that has been published. The author, Rev. C. W. Howard, is a practical agriculturist of wide experience, and has devoted a large portion of his time for many years to the instruction of others through the columns of the agricultural press. We advise every tiller of the soil in the Southern States to buy a copy of Mr. Howard's Manual. It will be furnished on application to the publishers, Messrs. Boyle & Chapman, 279 Main street, Memphis, Tenn., or to the author, Rev. C. W. Howard, Kingston, Ga. Price, twenty-five cents per copy.

THE VALUE OF THE AGRICULTURAL PRESS.—We are indebted to a worthy and enlightened gentleman, residing in Arkansas, for the following letter, which we publish, not on account of its flattering estimate of the FARM AND HOME, though we prize his good opinion

highly, but on account of his just appreciation of the value of the agricultural press and the good influence it exercises in promoting the prosperity and independence of our people:

Editor Farm and Home.—As the year for which my subscription to your inestimable work, the SOUTHERN FARM AND HOME, has expired, and I am not willing to be without it, though not a farmer, I herewith enclose you the club subscription price for the FARM AND HOME and *Southern Christian Advocate*. How any intelligent farmer is willing to *plod along* without subscribing for your work or some periodical of the kind I cannot see; they could never spend two dollars in a more profitable way. They would do well to deprive themselves of some luxury to save that much to pay for such a work, for in addition to the pecuniary benefits to be derived from it, I hold that *brain food* is as important to a life *rightly adjusted* as animal or vegetable food is to the system. I am trying to get several of my *farming* friends to subscribe for your work, but many of them put up the unmanly cry of "hard times." If your work were generally taken and its advice closely followed they would not have so much cause to cry "hard times."

Respectfully yours, W. J. B.
DeVall's Bluff, Ark., Jan. 8, 1873.

THE CRUISE OF THE OLUSTEE.—Instead of the story which we publish usually at the end of each number, we commence in this issue the publication of "The Cruise of the Olustee," by Capt. George W. Gift, which possesses all the stirring incident and exciting narrative of the most popular romance, while it has the attractive interest of being a faithful record by an eye-witness of one of the most brilliant exploits of the Confederate navy. The allusions to our valued friend and comrade, Col. John Taylor Wood, Naval Aid-de-camp of President Davis, do no more than justice to as gallant a sailor and as noble a Christian gentleman as ever lived.

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWNE, Memphis, Tenn.

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

MILCH COWS.—We would direct the attention of our readers to the advertisement of Alderney stock in another column by Mr. John B. Poyntz, of Maysville, Ky., a stock-raiser of long experience and established reputation. We would advise the writers of the numerous letters we have received recently, asking information as to where to buy improved milch cows, to address Mr. Poyntz, who, we have no doubt, will answer them satisfactorily.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the **FARM AND HOME** and any of those papers at the subjoined reduced rates :

FARM AND HOME and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
FARM AND HOME and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
FARM AND HOME and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
FARM AND HOME and <i>Columbus (Miss.) Democrat</i>	\$3 00

In addition to these we can furnish the **FARM AND HOME** and any one of the following valuable periodicals at the following prices :

FARM AND HOME and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
FARM AND HOME and <i>Southern Magazine</i> , per annum	\$5 00
FARM AND HOME and <i>Harper's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Appleton's Journal</i> , per annum.....	\$5 00
FARM AND HOME and <i>Hearth and Home</i> , per annum.....	\$3 50

VEGETABLE AND FLOWER SEEDS.—Mr. J. J. H. Gregory, of Marblehead, Mass., is well known as one of the few leading seed growers in this country. He was the original introducer of the Hubbard squash and many others of our new and valuable vegetables. All seeds from him are warranted fresh and reliable. His advertisements will be found in this number, and we invite attention to them. His illustrated catalogue for 1873 (now ready) will be sent free to all applicants.

CLUBS.—Those who may feel inclined to extend the circulation of the **FARM AND HOME**, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

VOL. IV, No. 4—3.

Answers to Correspondents.

We receive frequent letters asking us at what price we can furnish seeds, plows, and all sorts of garden and farm implements, chickens, sheep and Ayrshire cows. We must repeat what we have already frequently stated, that we do not sell any of these things, nor have we the remotest interest directly or indirectly in any establishment that does sell them. We must, therefore, refer our correspondents to our advertising columns for the information they seek.

CHUFAS.—J. C. S., Drew county, Ark., asks whether chufas are as profitable a crop for food for hogs as they are said to be in some of the agricultural papers.

We believe that hogs are very fond of the nuts of the chufa, and that it is a crop very easily raised, but we know that it is just as difficult to eradicate as nut-grass, which it resembles very much. Nothing ought to induce a farmer to allow a chufa to be planted on his place. It is better even to have his smoke-house in Cincinnati and his corn-crib in Illinois than to allow his land to be overrun with this pestilent plant.

PRUNING RASPBERRIES.—"Amateur," Tipton county, Tenn., asks what is the best time to prune raspberries so as to make them bushy, and not spindling.

This is a good time to head the old canes, and about July, when the new shoots are three or four feet high, they should be cut freely. In this way the side-growth will be promoted and the fruit surface will be largely increased.

ROOT-PRUNING GRAPE-VINES.—E. L. F., near Aberdeen, Miss., wants to know whether it is better to prune the roots than the tops of grape-vines, as he sees recommended in some books on fruit-culture.

We have never approved the practice of cutting away the roots of a grape-vine, because we think that every luxuriant vine needs all its roots to give it food and moisture. We have always pruned the vine itself, and even this not nearly as much as many fruit-growers advise.

COTTON SEED MEAL FOR MILCH COWS.—H. C., Colfax county, Miss., asks: Do you recommend cotton seed meal for milch cows? Does it promote the flow of milk? How much should be given each cow per day?

There is no better or more wholesome food for milch cows. It increases the flow of milk considerably. From two to three quarts a day fed in slop or dry, and until the cow becomes

accustomed to the taste, mixed with a little bran or shorts, are sufficient.

EGGS BY EXPRESS FOR HATCHING.—"Little Johnny," son of a subscriber in Meriwether county, Ga., "is not able to do much work, but thinks he might make some money raising fancy chickens," and asks "whether it would be better to buy the eggs, import them by express and hatch them at home, or spend all his money to buy a rooster and two hens."

We earnestly advise our young friend not to buy the "fancy" eggs and have them sent by express, because no amount of hatching at home will bring forth any chickens. We have seen the experiment made frequently, and the result was always utter disappointment. Whether the cause was the shaking of the eggs in transportation or the worthlessness of the eggs in the first instance, we are not prepared to say. We therefore advise him to "spend all his money" in the purchase of a Brahma rooster and a pair of hens from some honest dealer, and though the process will be slower, it will be much more sure than the imported eggs.

HEDGE-PLANTS.—F. M., Bryan county, Texas, asks: Which is the better hedge-plant for yards and lots—the pyracanthus or the McCartney rose?

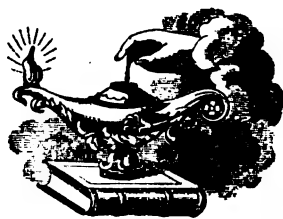
We would infinitely prefer the pyracanthus. Besides being perfect in all the qualities of a hedge, it is very ornamental. The McCartney rose is also a good hedge-plant, but it is too straggling and takes up too much room for a yard or lot.

SAWDUST FOR MANURE.—J. G., Richmond county, Ga., asks whether sawdust that has been used to bed stock will make good manure.

Sawdust which has absorbed the liquid manure of the stables does make a good manure, especially if it be made from seasoned wood, and of a wood that decays rapidly. If it be the dust of resinous, green wood, it is not a good absorbent, and is worth very little as manure.

GIRLS IN THE GARDEN.—If there is any one thing more beautiful than another in a garden of flowers, that *thing* is a beautiful girl, with a sun bonnet on her head so wide and capacious that you have to get right square before her and pretty near her to see the glowing cheeks that are sure to be there if she is at all accustomed to garden walks and works. Physically, there can be nothing better for daughters, and, indeed, for many wives, than to take sole charge of a small flower garden.

Literary Department.



EDITOR'S BOOK TABLE.

THE CLOCK STRUCK TWO, AND CHRISTIAN SPIRITUALIST: being a Review of the Reviews of the "Clock Struck One," Charges, &c., with Recent Investigations of Spiritualism. By Samuel Watson. (Boyle & Chapman, Memphis.)

When we heard that the author of this book at the last session of the Memphis Annual Conference of the Methodist Episcopal Church, South, had expressed regret that he had published the flagrant heresies of his former work, and that he had resolved in the future to conform to the faith, discipline and observances of the church of which he had been for so many years an active, zealous, and efficient minister, we were much rejoiced; first, because we thought that he could thus most effectively repair whatever injury had been done by the delusive teachings of "The Clock Struck One," and secondly, because an honest, conscientious, and estimable man had determined to abandon the path of error into which he had strayed and had returned to the simplicity and truth of the gospel faith and the peaceful enjoyment of a Christian life. It was with profound regret we learned shortly after that Mr. Watson had not abandoned his belief in spiritism, and that sooner than do so he had withdrawn himself "as a member and minister of the Methodist Episcopal Church, South." His publications in the daily papers as to his participation in the Mrs. Hollis' seances, where the spirit of the drummer "Jimmy" was made to utter blasphemy and infidelity, proved that he was fixed in his purpose, though, perhaps, unconscious of it, to turn away from the explicit teachings of God's Word, and accept as a substitute the speeches and counsel which professional jugglers and charlatans like Foster and Mrs. Hollis attribute to the "spirits" which they fraudulently pretend to call forth at their bidding.

This second work, "The Clock Struck Two," is more a vindication of his former book and the wild heresies which it contains than an announcement of any new facts or arguments, unless, indeed, "Jimmy's" revelations through the "tin trumpet" in a room "perfectly dark," as to the nature and division of the spirit-land, of his existence in the "fourth sphere," and his expectation to reach the seventh—"the abode of the highest and purest spirits"—be intended as conclusive proof that disembodied

spirits can and do visit the earth to teach us the immortality of the soul and give us their experience of the spirit-land. "Jimmy's" positive denial of the divinity of Christ, and his equally positive denial of the personality of God, may be sufficiently accounted for, as Mr. Watson accounts for them, by asking how could a drummer boy twenty years old, who "has been going about with Mrs. Hollis trying to convince people of immortality," know anything about Christ or God; but we certainly have abundant evidence in the Gospel that persons who entertain "Jimmy's" religious belief will not be permitted to be "perfectly happy and contented" in the next world, or even to approach as near to the abode of the highest and purest spirits as the fourth sphere is to the seventh. The space between Dives and Lazarus would be a more correct measurement of the distance. But the subject is really too serious to permit us to dwell on such bald absurdities. We feel too deeply concerned about the temporal and spiritual welfare of a man so estimable as Mr. Watson, who has done such good and faithful service in the Church of Christ, to be amused by his recital of what took place at Mrs. Hollis' seances or of his conversations with the spirits of John Wesley, Bishop Otey and others, in which the great founder of Methodism informs him that he is specially commanded to come and "bolster him up."

The knowledge that Mr. Watson is honest in his belief, and that he will adhere to it, embitters rather than palliates the painful regret we feel at his departure from what we believe to be the only way of salvation, and intensifies our dread of the fearful harm to others which his teachings may work. Were he a professional spiritualist like Foster, going about from place to place calling spirits from the vasty deep, at five dollars a head, and practising the vulgar tricks of the circus juggler, he would be comparatively harmless. But where a man whom all who know him declare to be "good," who has spent all his life in the service of Christ, decides to withdraw from the Church of God, and separate himself from the religious denomination which loved and honored him, to follow the faith which he now professes, and which the Holy Scriptures emphatically condemn, we deplore the fall and pray that a merciful God may yet turn the heart of the disobedient to the wisdom of the just.

As literary works, or as arguments in favor of spiritualism (we deny the possibility of "Christian spiritualism," as we do that of Christian profanity, Christian drunkenness, or Christian denial of the divinity of Christ or the existence of God, after the manner of "Jimmy"), neither the first or second strokes of Mr. Watson's clock are worthy of much attention. They are a feebly-constructed recital of the tricks of professional "wizards," such as Foster, Mrs. Hollis and others, and of the hallucinations of the author, and are in many instances so grotesquely absurd as to make one suppose that the design of the narrator is to convince

persons imbued with spiritualism of the extravagant folly of the doctrine, rather than to impress his readers with the sincerity of his own belief in it.

It is solely because Mr. Samuel Watson, formerly a preacher and member of the Methodist Church, has written them, that these books are deserving of serious notice, and it is on this account, and from our respect for Mr. Watson, that we deplore their publication. If we wanted to read ghost stories and tales of wonder, we would vastly prefer Walter Scott's "Demonology and Witchcraft," and if we felt any interest in the tricks of jugglers and ventriloquists, we should go to see some professional magician like Heller or Houdin, whom we have seen perform many tricks far more marvellous than anything Mr. Watson has described.

THE INTERNATIONAL SCIENTIFIC SERIES.—We have already on more than one occasion expressed our appreciation of the debt which the reading public in America owes to D. Appleton & Co., the well-known publishers, for the well-chosen series of scientific books which they are constantly publishing, from the pens of the most eminent authors, adapted to the comprehension and instruction of the ordinary reader, and elucidating in the plainest manner and free from technicalities, some of the most abstruse scientific subjects. "The International Scientific Series," the first two volumes of which are before us, namely, "The Forms of Water," by Professor Tyndall, and "Physics and Politics," by Walter Bagehot, author of "The English Constitution," are admirable works of the class to which we have referred. They are written in plain and intelligible language, the one presenting some of the familiar phenomena of surrounding nature in their physical and chemical aspects, and the other relating to the economy of human life. From the names of the distinguished authors who are engaged to contribute to the "Series," we feel assured that it will be the richest and most valuable collection of works on popular science in our language. The enterprise is a noble one, and most heartily do we wish the Appletons the rich recompense they so justly deserve.

THE DOCTOR'S DILEMMA. A Novel. By Hesba Stretton, with illustrations. (D. Appleton & Co.) This is a well-told, interesting story, displaying considerable power and capacity to handle a rather intricate plot. The incidents are very startling, and have as little reference to probability as the characters are unlike the men and women one meets in everyday life. The name of the story is well-chosen, for every one who reads it through will agree that the "doctor" was in a very serious "dilemma," and will rejoice at his happy extrication from it after many trials and troubles. The chapter relating the arrival of the heroine at a French village, her refuge in the house of the parish priest, and her aid in nursing the fever patients in the village hospital, are remarkably good. Indeed, the "Doctor's Dilemma" is very far above the average of modern novels.

THE STRANGE ADVENTURES OF A PHÆTON. A Novel. By William Black. (Harper & Brothers.) This is a narrative of the journey of a gentleman and lady of the Southern part of England, who with the lady's sister, Miss Bell, and a German officer, Count Von Rosen, who of course falls in love with Bell, make a journey in "a phæton and pair" through the midland counties of England, to Wales, and thence to the lakes and Scotland. The journey is well described, the scenery is graphically painted, and the *dramatis personæ* so limited in number, are interesting people. We failed to discover anything "strange" in the "adventures" of the "phæton," or that it met with any adventures other than those which any phæton might meet on the way from London to Scotland. Nevertheless the book is amusing and well worth reading. Count Von Rosen is an excellent character, and gives marked proof of good sense, good heart, and *savoir faire* in his courtship of and final marriage with Miss Bell.

THE WANDERING HEIR. A Novel. By Charles Reade. (Harper & Brothers.) It is hard to imagine a more thoroughly sensational story than is given in the seventy-five pages of this book. Like everything from the pen of Charles Reade, it is nervously written, and presents scenes of remarkable dramatic power. Kidnapping, white slavery in the American colonies, poisoning, escape from slavery, robbery of a title and estates by a villainous uncle, love, reappearance of the rightful heir, a homicide, a plot to convict an innocent man of murder, the wandering heir claims his own, a trial, the uncle dispossessed, a marriage, the heir is a "lord of high degree" with immense wealth, a triumphant progress, are among the principal incidents of this drama in the shape of a novel.

THE MAGAZINES.

HARPER'S for February is more than usually full of fresh, interesting and varied articles, and the illustrations, of which there is a profusion, are admirably executed. The following is the table of contents, in addition to the "Easy Chair," "Editor's Drawer," and the regular "departments":

Life in the Diamond-Fields—Albert E. Coleman; Robin's-Egg Blue—Mary E. Nutting; The Mont-de-Piete—Herbert Tuttle; Song of the Palm—Tracy Robinson; Mary, Queen of Scots—Lyman Abbott; The Life of an Eastern Woman—Edwin De Leon; Sub Rosa—Rose Terry; The Great Fairs and Markets of Europe—R. H. Horne; Delusions of Medicine—Prof. Henry Draper; Old Kensington—Miss Thackeray; A Wolf and Estray—D. B. Castleton; A Simpleton—Charles Reade; Recollections of an old Stager; One Quiet Episode—Fanny E. Hodgson; My Queen—John G. Saxe; The New Magdalen—Wilkie Collins; My Lady's Choice—Nelly M. Hutchinson; Valentines—Rose Terry.

LEPPINCOTT'S for February is a very attractive number, containing fourteen articles, some of which, especially "A Glance at the Antiquities of Athens," are beautifully illustrated, and all of which may be read with profit and pleasure. The following table of contents displays a variety to suit every taste:

Searching for the Quinine-Plant in Peru; A Glance at the Site and Antiquities of Athens, by J. L. T. Phillips; Commonplace, by Constance Fenimore Woolson; Probationer Leonhard, by Caroline Chesebro'; Country-House

Life in England, by Reginald Wynford; The Forest of Arden, by Ita Aniol Prokop; Jack, the Regular, by Thomas Dunn English; Observations and Adventures in Submarine Diving, by Will Wallace Harney; Confidential; Glimpses of John Chinaman, by Prentice Mulford; A Winter Reverie, by Millie W. Carpenter; "Passports, Gentlemen!" by A. H.; Our Monthly Gossip; Literature of the Day.

LITTELL'S LIVING AGE. We welcome with great pleasure the reappearance of this excellent periodical, which has so long—for some unexplained cause—been absent from our table. It is undoubtedly the best of our eclectic publications. The *Living Age* and *FARM AND HOME* will be sent to subscribers for \$8 per annum for both.

THE SOUTHERN HOMESTEAD. The first number of a periodical with this title, to be published monthly at Meridian, Miss., by Messrs. Shannon & McArthur, has reached our table. Its name implies its scope and purpose, and from the ability displayed in the first number, we are led to believe that it will prove a valuable addition to the press whose labors are devoted to the farm and fireside.

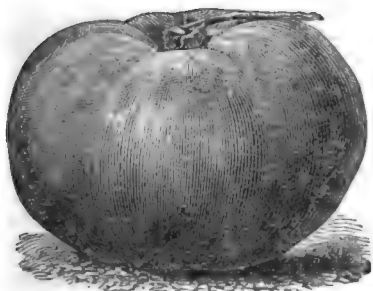
VICK'S FLORAL GUIDE for 1873. Our friend James Vick has achieved a new conquest in his guide for this year. When we received that for 1872 we hardly thought this possible. But he has excelled himself, and issued a beautiful pamphlet of 150 pages filled with exquisite pictures of all sorts of flowers, some of them beautifully executed chromos, accompanied by a well prepared and copious letter-press description, together with elaborate directions how to manage the flower garden, and a quantity of other information invaluable to the amateur florist. Vick's enterprise and go-aheadativeness deserve success.

CATALOGUE. B. F. Transou & Brother, proprietors of the Humboldt Nurseries, Humboldt, Gibson county, Tenn., have had the kindness to send us a copy of their Catalogue of Fruit and Ornamental Trees, &c., for this year.

THE JOURNAL OF INDUSTRY, published at Richmond, Va., is another new and acceptable candidate for the favor of the industrial public. We have just received a copy of the first number, and hope to receive it regularly among our exchanges.

POMEROY'S DEMOCRAT. We have recently received from the editor a copy of this sprightly, honestly-edited and independent paper, published in New York by M. M. Pomeroy, better known as "Brick Pomeroy." The *Democrat* is an earnest advocate of the old-time Democratic doctrine—not the fusion hybrid of modern times—is opposed to all shams, impostures, and rascality of all sorts, and meets all opponents with hard knocks. We sincerely reciprocate Mr. Pomeroy's kind wishes for our prosperity and happiness.

THE Danbury News says: "The remarks relatives and friends who attend a funeral make upon the merits of the deceased are frequently instructive. At the funeral of an aged resident of Slawsons, Saturday, a neighbor feelingly observed that the departed 'wouldn't rare and cuss about taxes any more.'"



THE CANADA VICTOR TOMATO.—James J. H. Gregory, the well known vegetable seedman of Marblehead, Mass., has brought out a new tomato which he recommends very highly, as excelling all others in early maturity, size, flavor and appearance. He gives the following history and description of the new tomato, and has sent us the cut at the head of this paragraph, to illustrate his description: [See advertisement.]

Last season a gentleman residing in Canada sent me a glowing description of a new tomato. I wrote asking for a pinch of seed that I might test it in my experimental garden, a tract of land of about three-quarters of an acre, which is pretty well filled every season with varieties of new vegetables my numerous correspondents kindly send me for trial. I planted these on my ground, anticipating the usual result, a tomato with some very good characteristics, but on the whole not superior to some kinds already before the public. About the time the plants were put out, left for Europe; when I returned my foreman called my special attention to this new tomato, which *had ripened its fruit several days earlier than any other kind of the twenty-five varieties I was growing scattered over my different farms.* On examining the new sort, I saw at a glance that here was a decided acquisition. The fruit was not only the earliest of all, but of large size and exceedingly symmetrical and handsome, while in ripening it had no green left around the stem, a great fault with many kinds otherwise good. The fruit was heavy, full-meated and rich, between round and oval in shape, and red in color; it was distributed very evenly on the vines. A correspondence developed the fact that the gentleman who sent it, had for the past three seasons been testing it side by side with other standard varieties, and found that it ripened six to ten days earlier. This fact may be in part accounted for, by its having been grown for years in a northern latitude, while the utmost care had always been used in the selecting of seed stock. As fair a test as I can present of its merits is this: a market gardener came over forty miles specially to examine my varieties of tomatoes on the ground as they grew, that he might select the very best for his own planting. After carefully examining every sort, *he emphatically declared his preference for this new kind, though he knew nothing of its history.*

Insurance Department.

Norman McLeod on Life Insurance.

At the recent annual meeting of the Scottish Amicable Life Assurance Society, the Rev. Norman McCleod observed that many persons, with whom in their distress he came in contact in his ministerial capacity, did not avail themselves of the blessings of insurance as they ought to do. He was not speaking of those amongst the wealthy or poorer classes, but of the middle classes. How was this neglect to be accounted for? He thought one of the causes, and one which was far more prevalent than people were aware of, was that which was very common to humanity—selfishness. There were many persons who had very little interest in spending money when they did not expect to get some immediate or direct return for it; they did not feel disposed, as it were, to spend money when they knew that no direct use could be made of it till the nails were put in their coffins. Yet a society like this was an excellent means of educating men out of selfishness, and training them to have due consideration for others. He supposed there was no man, excepting an extremely selfish man, who would go even on a voyage, or be absent from his family for a few weeks or months, without ever thinking how they were to get on, how they were to pay their rent, or get food or clothing during his absence. He would certainly seek to provide for them. How much more should a man provide for his family when he was taking that voyage from which there was no return. He had heard persons, under the guise of piety, say in these circumstances they would prefer to trust in Providence. Well, he thought we could not trust Providence too much when we did our duty; it was not only great ignorance, but it was real profanity to suppose that we were to trust Providence for helping us to become inconsiderate, selfish, procrastinating, and indifferent to the well-being of others. If they trusted Providence with such habits as these, they might also expect that God would cause them to suffer in order that they should be brought to a right trust. If they wasted their substance, and were indifferent to their families, were idle and procrastinating, he said, Providence would teach them by permitting them to suffer and to see the consequences of their own acts. Providence helped those who helped themselves, or in other words, those who did their duty. He thought there were some people who did not insure their lives from procrastination, forgetting that all the time they were thinking about it, they were liable to sickness, not to speak of death. The man who might be able to insure his life this week, might, in a week or a month, fall into bad health, or might suffer from some disease which would prevent his life from being accepted by any assurance office. Again, a man procrastinated until the small income which he received could not afford the premium. Such men forgot that they must purchase the

insurance at a dearer rate the older they were. He found again that some people did not insure their lives from great ignorance regarding the conditions on which policies were granted. It was very difficult to know how information should be spread in order to disperse the profound ignorance manifested by some. There was a vast number of things done by life assurance offices which could hardly be explained in the course of a short address, but he would advise persons to come frankly to the manager, explain the circumstances, and tell what was wanted for themselves and families, whether they wished to pay premiums annually or quarterly, or by limited payments, whether the policy was to be payable only at death, or on arriving at a certain age, and so on.

The Claims of Life Insurance.

The relation of life insurance to business, its aid of credit, and its capacity to promote trade, have never been recognized, or rightly considered; although its beneficent character is, to some considerable degree, appreciated, as the eight or nine hundred thousand policies now in force for the benefit of wives and children, and dependent relatives, attests. But the business is not looked upon by the public as having any relation whatever to their business transactions in the commercial world, but is regarded rather as an eleemosynary institution, and, therefore, is not sought after by them. One would suppose that the prudent business man would look to life insurance, in the uncertainties of business, as a help to credit, as well as a sustenance to those dependent upon him; but such are not the facts. The public do not recognize or seem to comprehend that a life-policy for the benefit of creditors is evidence of honesty and business forecast, which will not fail of its reward. Partners in business do not understand that by it, the troubles which so often befall co-partnerships by the death of one of the partners, may be entirely avoided. These facts seem to be overlooked by the great mass of our business men. They know nothing of life insurance as a protection to capital, as a means of increasing and establishing credit, and as a strong support to commercial operations. Our financial institutions, such as banks, and savings and loan societies, ignore its value as a basis of security to them upon their loans in addition to the usual mortgage or collateral required. The borrower himself forgets that a life-policy for five or ten thousand dollars would pay off the loan of such a sum, in the event of his death, without disturbing his homestead or other private property. Banks require the property mortgaged to them to be insured for their benefit, and ignore the fact that very frequently a life policy in their favor, as creditor, would be much more efficient security.

When life insurance shall be recognized as a legitimate business, and its facility to advance the particular calling of the assured, then it will, like fire insurance, be sought after, and the companies relieved of that enormous cost required to procure business.—*Coast Review.*

From the Public Ledger.

CRUISE OF THE OLUSTEE.

BY GEORGE W. GIFT.

Everybody has heard of the Geneva Conference lately held, whereat Great Britain was adjudged to pay to the United States a round sum of money as damages for having allowed certain good ships to sail from her ports, which thereafter became armed cruisers of the Confederate States of America, and did burn, sink and destroy sundry ships belonging to Americans. Among others it was claimed that damages were due for vessels destroyed by the Olustee, a vessel fitted out from a Confederate port, and with whose exploits this writer is familiar, having sailed as her executive officer. The Geneva Conference, however, did not call the good craft to mind forcibly enough to induce me to undertake the labor of writing the story of her cruise. I was moved to that by finding an old memorandum book in rummaging among a lot of old papers the other day, which among other data contained the following:

Saturday, Oct. 29, 1864.—At 6:30 P. M. ran the blockade from the Fort Caswell bar of Cape Fear river.

Sunday, 30.—Nothing special occurred. Smooth sea.

Monday, 31.—At noon overhauled Bremen bark Guttenberg, with emigrants, for Baltimore. At five P. M. burned American bark Empress Theresa, of and for Baltimore, forty-three days from Rio in ballast, John M. Bandell, owner, and H. T. Walter, master. This vessel was built in Matthews county, Va., in 1859; two ladies and one boy baby on board; christened latter "Olustee."

Tuesday, Nov. 1.—Fresh breeze from northward and westward all day; saw one sail; too rough to chase. Wednesday, 2.—Weather moderate and cold; at daylight two sails in sight; at 8:30 A. M. spoke British schooner Frink, from Matamoros, for New York, in disabled condition; at 10:30 A. M. spoke British brig Princess Alice, from New York, for West Indies; at noon sixty miles southeast from Cape Henlopen, steering north.

Here the memoranda ends, for immediately after the last entry "business" grew so brisk that I had no time to make entries as condensed even as were these.

The reader needs first to have some things explained in order to understand the following narrative. In the summer of 1864, Captain John Taylor Wood, one of the most reliable as well as useful officers in the Confederate States navy, matured a plan to release the prisoners confined at Point Lookout in Maryland. He purposed to sail from Wilmington with several swift blockade runners, carrying a picked body of seamen and a strong detachment of the marine regiment. From Wilmington he would sail into the Chesapeake Bay, up the Potomac, and alongside the wharf at Point Lookout. A thousand of as good men as were in the Confederate service were to fall on the negro guard and use it up with bayonet and broadsword, pistol and pike. The released prisoners were to be armed (arms were to be carried for the purpose) and ferried across the river to make the best of their way homeward, under command of General G. W. O. Lee, the present President of Washington and Lee University. This, you will admit, was certainly audacious, and if there is any merit in that quality the expedition deserved success. The plan was not only matured by Captain Wood, but was

approved by the authorities, and the vessels absolutely sailed down the river, and were crossing the bar at Fort Fisher to run the blockade, when a telegram came from Richmond by the wires and the signal corps, commanding a halt, as the expedition was known of and talked about in Washington. Wood reluctantly turned back and released all the transports but one, a double screw steamer, called the *Atalanta*, which, under his command, became the famous Tallahassee, and again the *Olustee*. That is to say, Wood fitted out this steamer a few days after giving up his project against Point Lookout, and she became the armed cruiser Tallahassee. Her first cruise lasted but seventeen days, in which time, I think, she destroyed thirty odd vessels. On her return her name was changed to *Olustee*, and made the cruise we are about to describe in detail from the memoranda quoted:

Our ship deserves the first mention. She was a clipper *par excellence*. Her length was about 220 feet, whilst her breadth was but one-tenth that much. Her engines were of immense power as compared to her slender hull, and were so perfectly constructed that when in motion making 120 revolutions per minute, no jar or noise was perceptible. We had a couple of Parrot rifled guns, one a hundred and the other a thirty-pounder; the latter mounted on a very high carriage, in order to get elevation for long range. Our crew was a very motley assemblage. We had not more than eight men forward who could box the compass and steer properly—the others were North Carolina conscripts, poor, sickly, "weakly," lazy fellows, thinly clad and totally unacquainted with the sea. In addition to these we had a detachment of marines, under Lieutenant Doak (now of the Clarksville Tobacco Leaf), who were pretty good fellows, thanks to the "crucifixions" their commander subjected them to. Aft we had five officers who might have been worshiped, and yet no sin committed; for their like was never seen before on land or sea, and it is hoped that such will never be seen again. These five worthies were passed midshipmen, one of whom, a hopeful young Texan, was to be our navigating officer (a pleasant piece of imagination on the part of the Secretary of the navy, as I did that job myself). These boys were Confederate midshipmen, who had been entered during the war, and promoted without ever having been wetted by salt water. They were to be deck officers, to give directions to others as to the management of the ship, of which they were as ignorant as boobies. As a matter of course they vomited like pigeons, and soon coiled away behind the smoke-stacks—all of which cost me a good deal of sleep. Our mission was to sally forth from Wilmington and appear off the mouth of the Delaware and Sandy Hook; burn, sink and destroy the vessels of the enemy, and then fly back to cover. Wood had demonstrated by his cruise that things could be made so hot off New York as to pretty much lay up all American vessels. We were to continue the game, assisted by a consort, the *Chickamauga*. Both vessels were

ready for sea, and we steamed from town to the forts on the 26th of October, and anchored in plain view of the blockading squadron outside, which consisted of a dozen or more vessels at each bar. On the 27th the *Chickamauga* practiced at a target, which was sufficient notification to the enemy that one of the vessels, at least, was an armed cruiser and ready for sea. This increased the vigilance of the enemy, who stood boldly up to the very mouth of the channel of the bar, to stop the way against the dashing cruisers that were soon to let slip the dogs of war in sight of their very greatest marts of commerce. Wilkinson, of the *Chickamauga*, who had committed the indiscretion, determined to make the first venture at breaking through the line. He had eluded the blockade many times previously, and was so cool and so determined—a very Viking, in fact—that there was little fear but that he would go through, and he did on the 28th. On the 29th, it being quite smoky and hazy, we had steam up by five o'clock, and hoped to get out before the enemy was ready to receive us; besides, the tide served at that time. Slowly we steamed by the forts, obscured by the smoke, and crossed the "rip," or inner bar; down along the shore we went to the outer bar. I said we had "steam up;" this means we had the last ounce of pressure our boilers were allowed to bear, which was twenty-five (25) pounds to the square inch; with fires thin and perfect, and coal sorted and piled in front of the fire doors ready for use. The engineers volunteered to add the fuel by hand, throwing a lump here and another there, just exactly as it was needed. Noiselessly we progress until the pilot says we are right opposite the gap to be jumped; the signal man faces the shore, and telegraphs* for the range lights or beacons to be shown, that we might be guided across the bar by keeping them in line. A superannuated pilot had charge of these beacons, and was not at his post promptly, and there we lay, with steam accumulating in our boilers at a fearful rate. If we were compelled to "blow off," the noise would be heard for miles, and our nice little arrangement understood. Minutes flew, and still no lights; finally the safety-valve lifted and the steam snorted, and it is said that the executive officer did likewise on that occasion. For several minutes we lay roaring like a thousand sea lions, but finally the old chap "opened" his lights and we moved out, slowly and gently at first, with the leadman crying the soundings sharply and rapidly: "And a half two! and a half two! two fathoms! two fathoms! and a quarter two! and a half two! and a half two! three fathoms!" Then a slight pause, and with the usual drawl which passes for a "song," he gave us "by the mark four!" This meant that we were outside and must shape a course. The pilot ordered the lead in and formally turned the ship over to the Captain, who ordered her course shaped

* The lights used by vessels on such occasions were closed up in a box and shown by raising a sliding door in front of them. Two lights were used, a red and a green one. Communications could be transmitted with the same fidelity as with flags or torches.

south by west, which would carry us clear of Frying-Pan Shoals. I passed the word into the engine room—we did not use bells or gongs on account of the noise, but a gutta percha tube instead—to “let her go!” In an instant the throttles were pulled wide open. The good ship sprang forward like a noble greyhound loosed from the leash; the engines beat half seconds, and all astern was foam and phosphoric light. Forward, or on the sides, you found no evidences of great speed, as the ship was so sharp and tapered so far aft that she made little or no “break.” I was amidsthips on the bridge, peering into the darkness (for it was now very dark), in search of an enemy, and had not given any thought as to the speed of the vessel. Suddenly I was interrupted by a sharp pull at my sleeve, and, looking around, saw our Charleston pilot, an old cock who had been bemoaning his fate for several days, in that he was compelled to go to sea in a slow propeller. He drew me to the side, and with wonder and astonishment expressed in every motion, pointed to the outboard delivery, an orifice in the side near the water-line, through which was being discharged the water used in condensing the steam. This stream of water was near a foot in diameter, pouring out like a jet from the nozzle of a fire-engine hose. Cutting into the still water it stirred up the animalculæ, which in turn threw off a brilliant light, making the surface look like molten metal, disturbed and agitated by a violent wind; and what added to the delusion was the hissing of the waters as they came in contact, and which gave a correct idea of the velocity with which we were moving through the water, and it was this which had attracted the attention of the experienced old salt who had me by the button, rather than the beautiful effect I have attempted to describe. After a long breath of relief the old man remarked that he had heard of such things before, but never believed a word of it. “She’s five knots faster, sir, than any ship ever built in America.” But we had not much time to discuss the speed of ships, for just then we passed a schooner at anchor, from which was thrown up a rocket pointing in the direction we were going, and then another and another. This was to warn the steamers outside to concentrate on the line pointed out by the rockets.

This rocket-throwing we knew was sure to happen, and therefore were ready with rockets also, which we threw in a direction perpendicular to the course we were steering, to bewilder our pursuers. However, this did no good, for very soon the people on our starboard side discovered a steamer approaching, and almost at the same instant another was seen coming down on the port beam. This latter was forward of the beam, whilst the first was abaft; hence we would be compelled to pass the last discovered vessel, whilst the first would have to give us a stern chase; therefore, our attention was particularly directed to the port side. The guns were trained on this chap and their muzzles changed as he altered his bearings. Doak’s marines and those of the ship’s company, who were armed with small arms, made ready to

give him a volley. We must have seen both enemies before they saw us, as I think we could certainly have gotten the first shot had we so desired, but our policy was not to disclose our character, but quietly stand by our guns and fight only if disabled and brought to bay. Now the fellow sees us, for he shows us a faint whitish light before opening, that he may not fire into a friend; we promptly show him a red light in return, which disconcerts him, for he repeats his signal; then we show him a green light; more bother, and he displays the signal for the third time, which we answer by showing him both lights. Whilst this showing of lights has been going on, the starboard fellow has been dropped, whilst the one on the port side has headed up on the same course we were steering, with his head about up to our waist, and so near to us that I could distinctly see the glitter of the lace on the officers’ caps and coats as the rockets they commenced throwing glared out in the darkness. The time gained had been valuable, but our strategy was not to carry us away scot free, for when we displayed the two lights there was no longer any doubt as to our character, and the gentleman on the left gave us a broadside. Luckily he pointed too high and all his missiles went above, except one shell which ranged through the forecabin, doubled up an iron stanchion and exploded, doing no more damage, however, than setting fire to the bedding of some of the petty officers, and scaring out three stow-aways. But this was not the last shot by any means, for the vessel on the starboard side had opened, and our near neighbor seeing that he had no chance to keep up, was plying his guns and rattling the shells above and around us as rapidly as men could work. And there we had to stand and take it, and never strike a blow back. How I longed to drop alongside this confident fellow and surprise him with a broadside; but that was not to be. He was a great side-wheel, beam engine ship, and as I watched the motions of her walking-beam, and observing the big black hull drop further and further away, she reminded me of a great tired, unwieldy, slow-motioned cur dog chasing a hare. We got twenty or thirty shots and sped away out of sight into the darkness. But our troubles were not at an end by any means. The rockets and firing had set the whole fleet in motion to intercept us, and we had scarcely left our first tormentors out of sight, before four or five others (we could never settle the number) appeared ahead of us or off either bow. Here was a predicament. If we held on our “north-west course,” as did Paddy, when bound to Fingal, the chances were that we would fall into a covey of enemies, who might make short work of us; if we swung sharp to port we might get ashore on Cape Fear reef, whilst the beach was not too far away on the starboard side if we went in that direction, but this latter was the best thing to be done under the circumstances, and we did it, and did it quickly, too, for there is not much time for deliberation in a ship going twenty knots an hour, and close aboard danger right ahead.

[30 BE CONTINUED.]

Vol. IV. No. 5.

THE
SOUTHERN

FARM & HOME



MARCH, 1873.

W. M. BROWNE, EDITOR.

PUBLISHED BY

BOYLE & CHAPMAN,
MEMPHIS,
TENN.



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Alsike Clover, } - - 75 cts. per lb.
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Sow six lbs. to the acre.

Seed Rye, - - - \$1.15 per bush.

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No. 1, A, B or C steel point.....\$1 50
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No. 6, cotton scraper..... 2 50
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Improvements have been made from time to time upon the "Brinly Universal Plow." These changes are indicated by the letters A, B, C, etc.; therefore, persons ordering extra standards and points must be careful to give the letter as well as the number, also the date of the patent on the casting to be replaced, and state whether your plow is straight or crooked beam, and give the number of the kind of upright.

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Nov. '72.-6m.

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MAGIC ARNICA LINIMENT,

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The great success of this powerful penetrating Fluid warrants the proprietors in pronouncing it the greatest Liniment extant. It is a penetrating Fluid, which passes immediately through all the tissues, muscles, and to the bone itself. Its action upon the Absorbents is not to seal them up, as other liniments do, but to open them and increase the circulation. It is based upon scientific principles for cure or natural restoration of all organic derangements, whether in man or beast. Send for a Circular bearing the evidence of its wonderful efficacy, from the following well-known citizens of the South:

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A REGULATOR,

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The enlarged experience of Dr. Jackson, who made the Diseases of Women a specialty, made him eminently successful, and to that experience and success we are indebted for the happy combination known as his

FEMALE VIGORATOR.

This Preparation is intended specially for the Cure of Female Diseases, such as
CHLORORRHOEA, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION, SUPPRESSED MENSTRUATION, LEUCORRHOEA, UTERINE ULCERATION,
And all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really believed that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and those who are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and similar affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a faithful trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. See that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

WHILE THERE IS LIFE THERE IS HOPE!
THE VERY BEST LUNG MEDICINE EXTANT.

HUNGARIAN BALSAM OF LIFE.

This valuable compound is no secret preparation. Its ingredients are well known, and, what is better, have been well and successfully tested. Read the list:
WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR, HOARHOUND, LUNGWORT, SQUILLS, SENEKA, MATICO, LOBELIA, ENGLISH WOOD NAPHTHA.

The most scrupulous care is observed in selecting the above materials, in order to secure the full medicinal powers of their active principles, and we claim that the HUNGARIAN BALSAM OF LIFE has not only the happiest and most effectual medicaments for its composition, but that it contains the LIFE of each ingredient in perfect combination. Wood Naphtha has attained a wonderful reputation for its powerful renovative powers in CONSUMPTION; but the numerous inferior articles and imitations called by its name have almost crowded out the pure and much more expensive genuine, and, in consequence, the latter is seldom accessible to the majority of the people. It is guaranteed that none but the purest and best English Wood Naphtha is used in the HUNGARIAN BALSAM OF LIFE, and the Proprietors can show, by VOLUMES OF EVIDENCE, it stands positively unrivalled for

THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA, WHOOPING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

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Memphis, Tenn.

Proprietors, also, of the TEXAS TONIC SYRUP, for Chills and Fever; LA OREOLE HAIR RESTORER, HIGHLAND BITTERS OR SCOTCH TONIC, DR. BRAZIER'S LIVER MEDICINE, &c.

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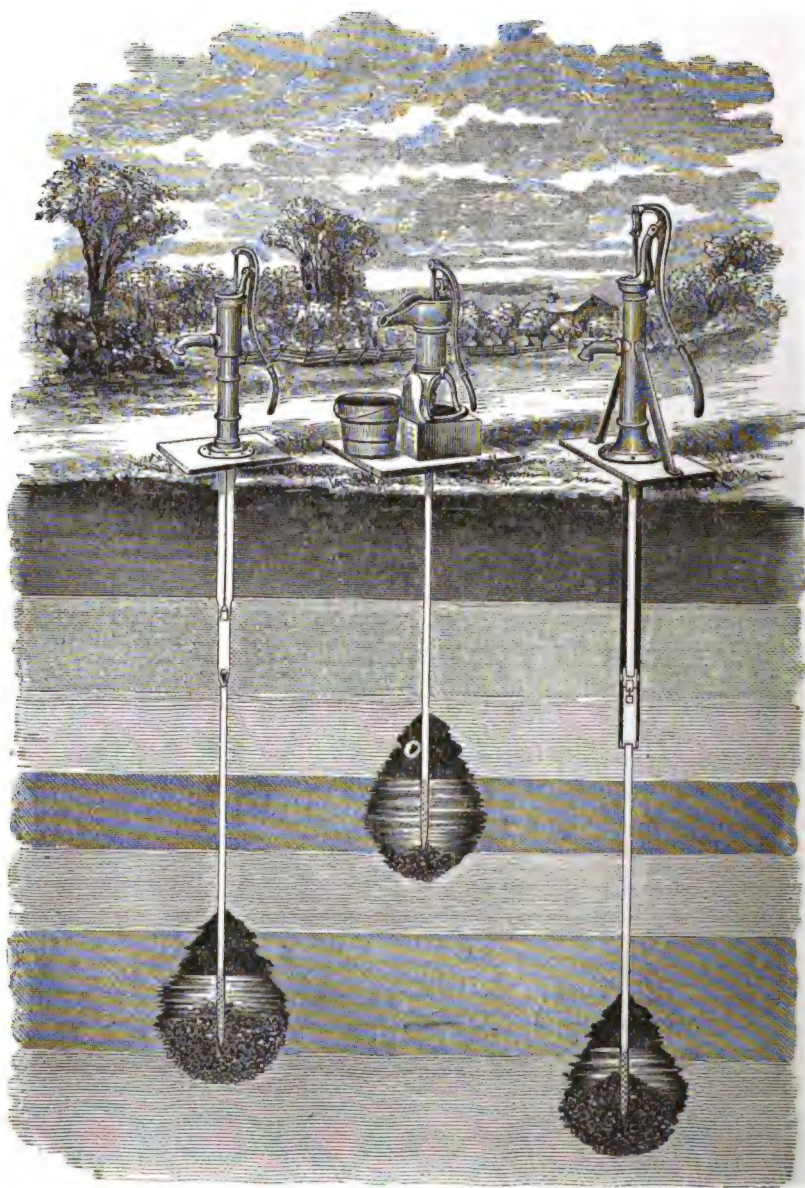
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BEE HIVES, ETC., Little Man, Springfield, O.
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MERINO SHEEP, C. W. Howard, Kingston, Ga.



COWING'S AMERICAN DRIVEN WELLS.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV.

MEMPHIS, TENN., MARCH, 1873.

No. 5.



Farm Work for the Month.

If we had the same readers every year, and if all of them would preserve their copies of the FARM AND HOME for reference, it would not be necessary to repeat the advice we have heretofore given as to what is the farm work for this month, and how it should be done. But we have many readers whom we had not the privilege to address a year ago, and of those we had there are many whom it may benefit to remind them of what to do and how to do it during this, the most important month of the crop year. The unusually severe weather during the winter has necessarily retarded the work of preparing the soil, so that even those who recognize the importance of thorough preparation have been unable to carry it out as fully as is desirable. In most of the Southern States corn planting is done this month. In the extreme South some corn may have been planted in the latter part of February, but the main Southern crop will be put in the ground during March. Farmers this year, feeling that they are pressed for time, are very likely to argue that they must do the work in a hurry in order to do it at all, and that planting corn on a *list* is about the best they can do, leaving the middles to be plowed when they can "get round to it." We warn all who contemplate planting in this way that it is better for them to plant half the area they intend to plant on well-prepared soil than to plant the whole badly. They will gather more corn in the

fall and save labor. In very loose clean land *listing* may be excusable. It is never desirable. But in stiff upland it is destructive of the possibility of a good crop.

Let the entire ground be deeply and closely broken. It is too late now, we admit, to attempt to subsoil every furrow, but it is not too late to subsoil the center and two side furrows of the corn row. This is, in our opinion, essential to the protection of the crop against the effects of the summer droughts. In another part of this issue we republish the essay on the treatment and cultivation of corn published several years ago by the late James M. Chambers, the gifted editor of the *Soil of the South*, and which in our judgment is the best, plainest and most comprehensive lesson on corn culture we have ever seen.

We reiterate our advice, to give the corn crop more attention and sufficient space to insure an abundant supply, even if by doing so the cotton crop must be curtailed. We will not repeat the arguments in favor of this course. The experience of the last few years is the most cogent argument we could possibly adduce.

PREPARATIONS FOR COTTON PLANTING.

However opinions vary as to early or late planting of the seed, there can be no disagreement as to the importance of completing the preparations for planting this month. Where the mule and plow force is sufficient to permit it, we advise a thorough plowing and subsoiling of every foot of cotton ground, but if this be impossible let the center and two side furrows of every bed be subsoiled as deeply as practicable. Open with a long broad shovel, follow with a Brinly subsoil plow, and throw a furrow on each side to the center with a turn plow, following it with the subsoiler. If we had to

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select between subsoiling and liberal manuring on ordinary land for cotton, and could not employ both, we should choose subsoiling to make a good crop.

We publish elsewhere in this number Mr. David Dickson's directions for cotton planting. His uniform success as an upland cotton planter warrants perfect faith in the correctness of his advice as given in his excellent "Practical Treatise on Agriculture."

LUCERNE.

This is the month to sow lucerne, the best and most profitable forage crop we know. Let the soil be rich and well prepared. Sow in drills wide enough apart to allow a narrow cultivator to pass between them to keep down weeds and keep the rows clean until the lucerne takes full possession. From 12 to 15 lbs. of seed are sufficient for an acre.

FORAGE CROPS.

In addition to lucerne, plant millet, Hungarian grass and drilled corn so as to insure an abundance of forage for the stock and secure independence from Northern hay. In sowing drilled corn, sow thickly, not less than three bushels to the acre.

SWEET POTATOES.

Plant so as to have a large crop of sweet potatoes. They are a most profitable crop, and useful alike in the nourishment of man and beast.

IRISH POTATOES

may still be planted, and we advise our friends to plant a good-sized patch and not a few rows in a corner of the garden. With proper care they may be kept sound all the winter.

SPRING OATS.

A good crop of oats may be made from seed sown now on well-prepared and good soil.

Immigration.

The efforts which have been made up to this time to induce foreign emigrants to come to the Southern States have failed, because in our humble judgment they were misdirected. The South needs settlers (not laborers) who will bring with them capital, intelligence and good habits, who will purchase our surplus lands and establish colonies, and thus conduce to the prosperity and productive wealth of the country.

To induce this class of people to emigrate we must send commissioners to Europe, whose services will be recompensed otherwise than by a given number of dollars a head for the

emigrants they gather up and send out. The commissioners should be men of high character and intellectual capacity, thoroughly conversant with the industrial resources of the South, and who, armed with the commissions of the Governors of their respective States, will inspire confidence among the people, and not be regarded, as the "foreign commissioners" hitherto sent abroad have been, in the light of hotel *touts* or steamboat runners. Instead of engaging the first man that can be caught who "speaks Dutch," and getting him for as small a compensation as possible, the very best and most prominent man should be sent, and his compensation should be sufficient to give dignity and importance as well as efficiency to his mission.

The class of people who can be collected on the wharves at Hamburg and Lubeck, and paid to emigrate to the South, are the very people we do not want. They are generally of the lowest order, have no means, and are only fit to do menial labor. They are in no sense the people to develop the resources of any country. They are more of a hindrance than a help.

We want the better order of educated settlers, who have been small farmers in their own country, but who, from the high price of land at home, are unable to become proprietors, may be induced to come to this country to improve their condition and provide amply for their families.

In our opinion there is no laborer for the cotton States so efficient as the negro. We may be compelled to employ the German, Danish and Dutch peasant when we cannot obtain negroes, but while we can hire the latter it would be a sad mistake to employ the European laborer.

We have plenty of room for the settler. We need his capital, his intelligent skill, and the example of his frugality and thrift. And if the right means are employed, the proper agents commissioned, and if accurate information as to the agricultural, mineral and industrial resources of our country, its soil, climate, geography, &c., be diffused, this class of population may be readily induced to come and settle among us. The most effective means to this end is to induce leading citizens, say of Great Britain, France, Germany, Denmark and Holland, to come here, see the country, judge of it for themselves, and then become the leaders of future colonies of settlers.

When we heard that the Rev. C. W. Howard intended to visit Europe last year to promote immigration to Georgia, we had hope that a great movement of the right sort and in the right direction would be made. We know that Mr. Howard is opposed to the importation of common laborers, and that he understands desirable immigration to mean the settlement of our surplus lands, the development of our mines, the improvement of our stock-farming, the planting and management of vineyards, &c., by foreign emigrants with the means, knowledge and morality necessary to do these things and become useful and worthy citizens.

It is men like Mr. Howard who should be sent to Europe as commissioners, if they can be found and induced to go; and they should be liberally remunerated, and their office and duties exalted as much as possible. There are plenty of men who "speak Dutch" who can be "hired," as the phrase is, to undertake the duty for a few hundred dollars, but the expenditure just amounts to paying the expenses of the hired Dutchman to visit his native village, drink lager beer in the wharf taverns of some foreign seaport, and bring with him a few unprofitable farm laborers, who, after trying labor in our cotton fields in the dog-days, "throw down the shovel and the hoe," and become the presiding geniuses of peanut and apple-stands at the corners of the streets of our towns and villages.

If we are to have immigration, let us try to get the best, and if we make the effort, let it be in the right direction.

Veterinary Education.

LETTER FROM JOHN PLOWHANDLES.

MR. EDITOR—We are just commencing our State Agricultural Colleges, which I believe are destined, under wise management, to be the most valuable educational institutions in the country. Some of them are already in operation, but up to this time I have failed to find any provision made in any of them for a chair to teach the veterinary art. This omission is much to be regretted. Our people are just beginning to see the importance of paying more attention to stock and sheep-raising, of improving the breeds, and making stock-raising a Southern industry. It is essential to success to have a better knowledge of the diseases of animals and their treatment. We know the character and attainments of those who are known among us as "cow-doctors"

and "horse-doctors," who, when a cow has the imaginary ailment of having "lost her cud," undertake to supply it by forcing a lump of beef or bacon down her throat, or who, when a horse has inflamed eyes, which they call "hooks," profess to cure the disease by cutting away the inside of the eye-lid. We know how every species of lameness in a horse is called "swinney," and how hollow-belly in a cow, after a winter's exposure and starvation, is called "hollow-horn." There is no such thing as knowledge of the diseases of animals and how to treat them. I do not know in any State in the South a single enlightened veterinary surgeon who has graduated in a veterinary college, and is really qualified to practice. At the North and in Europe veterinary surgery is a profession requiring as deep study and as assiduous application as the medical profession for the treatment of human diseases, and recognized as entitled to as much honor and consideration as any other. The veterinary surgeons of cavalry regiments in Europe are commissioned officers, and associate with the first men in the land. And what is the result? The professors of the veterinary art in that country are not only thoroughly versed in the diagnosis and treatment of the diseases of animals, but they know how to prevent disease by a knowledge of the influence of soil, climate, ventilation, clothing, food, water and general treatment upon the animal system. From the immense sums invested in England, for instance, in horses and other stock, competent veterinarians are a necessity, and they are equally so here, it will be conceded, when we read the statistics of the yearly losses of live stock, estimated, as I have seen them stated, at nearly forty millions of dollars.

Let the managers and founders of our agricultural colleges provide for this manifest want at once, endow a veterinary chair in each college, and secure the services of the best and most competent professors, not the least unlettered "cow-doctors" or "horse-doctors" we can find, but men really competent for the places, and let the course of veterinary study be full enough and long enough to enable the students who apply themselves to this branch to leave the college fully qualified to practice and take rank with the most eminent veterinarians of other countries. We have the most favored country for stock-raising in the world. It ought to be one of our most profitable industries. It is not enough to import thoroughbred stock, we must know how to treat them,

and to learn this we must provide competent teachers, and in no way can this be better done than by making the veterinary science and practice a prominent branch of the educational course in the agricultural colleges.

JOHN PLOWHANDLES.

For the Southern Farm and Home.

Hedges Instead of Board or Rail Fences.

MR. EDITOR—I read in a recent number of your valuable periodical a communication recommending Southern farmers to substitute board for rail fences, and showing the comparative economy of the former in a series of years. I see also in other agricultural papers, articles recommending wire fences, and showing how effective and cheap they are.

I agree with you that plank fences, provided they are well made of good cedar or chestnut posts, well set, and seasoned heart lumber, will be found in ten years to be vastly cheaper than the ugly, weak, and imperfect rail fences by which the country is now disfigured. I know nothing of the wire fences, and doubt very much whether they are any account except for a flower yard or some small lot near the house. In my opinion, the best fence possible is an osage orange hedge. In three years after it is set out, if the work be well done and the plants are properly cut back so as to induce thick growth from the roots, the hedge will be dense and thick enough to turn anything living, and that too at a quarter of the cost of the cheapest plank fence that can be built, and this hedge once established will be as near perpetual as anything can be.

I know that people have tried to raise osage orange hedges and have failed, attributing the failure generally to climate. They are mistaken. Their failure was caused by their slovenly way of setting out, and by their lazy neglect of the plants subsequently. If any man will prepare the ground on which he wishes to plant his hedge as thoroughly as he ought to prepare it for a crop of corn, then in the spring, plow out a deep, straight furrow in the center where the hedge is to grow, set out plants two years' growth from the seed, cut them down nearly to the root, set them by a line, cover them almost to the top, and plow and cultivate them so as to destroy all weeds and grass, his first year's work will be well done. In the winter of the first year, if the plants are liberally top-dressed, or mulched with litter or coarse manure, the next year's

growth will be much more vigorous. In the spring, the plants should be cut back nearly to the ground, the next spring to four or five inches above the preceding cut, and the third spring in like manner. Then the hedge is complete, and only needs trimming to the right height with an ordinary hedge-shears. In the first spring after setting out, care should be taken to see if any plant has failed, and if so to replace it from the nursery.

I think that the total expense of a hedge such as I have described need not exceed fifty to sixty cents a rod, and if the plants are raised at home from the seed, not bought from a nursery, the expense would be of course much less. I repeat, hedges only fail because they are carelessly planted, never cultivated or pruned, and allowed to grow into spindling trees, never cut back so as to promote bushy growth from the bottom.

I have no experience of the pyracanthus or mulberry, but I believe they could be made to answer as good a purpose as the osage or bois d'arc. The English hawthorn will not do. Why, I cannot tell. What a beautiful sight would be a plantation divided by evenly-trimmed, dense pyracanthus hedges in full bloom!—how different from the shackling, crooked rail fences! BOIS D'ARC.

For the Southern Farm and Home.

Harrowing Wheat.

MR. EDITOR—If farmers would only believe it they could increase their wheat crop very much by running a smoothing harrow over the fields once or twice in the spring. It makes no difference whether the wheat was sown broadcast or drilled, the harrowing it will improve it. It looks to the inexperienced as if the harrow would tear the crop all to pieces, but those who have tried it know better, and I could not be induced to neglect this important work. I have a light smoothing harrow of the Thomas make, with which I go over the crop twice, at an interval of eight or ten days between the operations, and I find that it does not injure the stand at all, while it stirs and pulverizes the soil finely. I do not care which way I run the harrow, whether across or with the drills, the effect is the same. The harrowing should be done while the plants are small. When they get to be twelve inches or so high, they should not be disturbed.

BRANDON.

JAMES RIVER, VA., Feb. 3d, 1872.

For the Southern Farm and Home.

Manufactures.

MR. EDITOR—I hope you will not relax your efforts to make the Southern people see and recognize the importance of establishing manufactures in their various States. They seem apathetic and hard to convince now, but remember that all reforms are slow in making their way, and that no great good is achieved without much labor and no little discouragement at first.

The people seem to think that because they are poor—have no accumulated capital—they cannot attempt a factory of any kind. They cannot imagine a factory as anything but a “mammoth” establishment with its hundreds of operatives, employing a capital of hundreds of thousands of dollars, and with buildings covering several acres. They do not believe there is any money in “a small concern,” and because individually they do not possess the means to start the “mammoth establishment,” they give up the idea as hopeless, and conclude with the argument that “we are an agricultural, not a manufacturing people, and that we had better stick to what we understand.”

They do not know, or they have forgotten, that the largest and most successful factories on the continent began on a small scale and grew up with success, and that to no class of enterprises is the old saying more applicable than to factories, that “great oaks from little acorns grow.” If we would only make a beginning and establish factories for the manufacture of the things we need, and which we now buy from abroad, we would soon “acquire strength in going,” and many years would not elapse before we too could boast of our mammoth establishments. The commencement of A. T. Stewart’s establishment was a small venture in Irish linens.

It is a plain proposition that if we could buy at home the things we now purchase abroad, we should be a wealthier, more prosperous and independent people. It is always good to keep as much money at home as possible. Count over the articles of prime necessity which we must use to live and carry on our business and see how many of them are made abroad, and for which we have to send away our money to enrich others and impoverish ourselves. Count again and see how many of these same articles are made of material which we have around us in abundance of better quality and at less prime cost than that employed by the manu-

facturer from whom we buy. Nay, further, how many are made from the raw material taken from our doorsteps, exported thousands of miles, wrought up by foreign enterprise, and sold back to us at immense profits.

But this is not the only argument in favor of home manufactures. If we had factories in our towns and villages, population would increase rapidly; skill, enterprise and capital would flow in among us. We should have steady and easily-accessible markets for our varied products, our agricultural interests would be stimulated and protected, our lands would increase in value, and our productive power would grow. Where there are factories there is no need of immigration agents. A good, prosperous factory is the best of all *runners* to attract immigrants. It is not, therefore, the direct profit of the factory on the sale of its manufactures which alone makes it desirable and should attract people to engage in it, but it is the indirect profit arising from the numberless benefits which it brings in its train.

With our advantages of natural resources, climate, power and facilities for transportation, we ought to be one of the first manufacturing nations in the world, and yet we buy everything wooden from a ship’s mast to a shoe-peg, everything of iron from a boiler to a darning-needle, and though we raise all the cotton used in America, no Southern man wears a shirt of which the material was not spun and woven in a Northern factory.

Can we not try to begin in a small way to emancipate ourselves from this degrading and ruinous dependence. Try if we have not sense and skill enough to make the buckets we use out of the cedar forests all round us. Try if we cannot spin the ropes we use for our plow lines. Try if we cannot make the hames for our plow mules. Try to make the coal and iron ore at our feet make some of the things we now buy from Pittsburg.

The fact is, Mr. Editor, I believe the first thing you have to do is to persuade us that hiring free negroes to make cotton while we sit on our verandahs and look on is not the “entire duty of man,” and that there are other occupations which are equally honorable.

HAMMER AND ANVIL.

MEMPHIS, February, 1873.

Every man who is fond of preaching economy to his wife, should ask himself how often he practices that self-denial which he is constantly recommending to her.

For the Southern Farm and Home.

Railroad Freights.

MR. EDITOR—There is one serious hardship to which we farmers are continually subjected, to which you have never alluded, to expose or to relieve, namely—the immense freights we have to pay the railroads for carrying our produce to market, and for bringing us what we consume. These giant monopolies, which are fast sapping the resources of our country and obtaining a controlling influence in State and federal legislation, have us in their power and make us pay whatever they please to charge, until all our profits, even where we make any, are gobbled by freights. We see boasted reduction in freights on all through lines, but the poor devils of farmers who live along these lines at way stations and pay *way* freights are made to pay twice over whatever advantage is gained by the merchants at either end of these through lines. I will give you an example. A friend of mine sent to Cincinnati last fall for a few bushels of barley of an improved variety, to be sent him as freight to a *way* station about thirty miles from Atlanta (Ga.), on the State road. He told me that if he had ordered the barley sent on to Atlanta, and had sent a wagon and team to bring it back to his place, the saving of the through as compared with the *way* freight would have more than paid for the hire of the team. And so it is everywhere. All the railroads discriminate against their *way* customers, some more than others it is true, but they all do it, and the burden is becoming intolerable. There is only one way to remedy this, and that is for the State Legislatures to interfere and compel the railroad companies to act fairly toward us in this particular. They have the power to limit the cost per mile for passenger fare and why not the cost per mile per ton according to classification for freight on produce and goods? If the railroads are strong, let them be merciful. I applaud the object of their directors to “build up the interests” of certain big cities, but I deprecate their doing so entirely at the expense of the villages and of the farmers. I do not make any point on the extent to which the railroads are dependent on agriculture for their support. That is a self-evident proposition. They could not declare many dividends if they had nothing but their through freights to depend on, and would not have many of them if it were not for our produce. I want only fair play, and not be compelled to carry the whole load.

I want to see one State Legislature show the example of regulating this matter equitably, and to show the rarer and more cheering example of regard for the interests of the people, uninfluenced by rings or wealthy monopolies. Surely the best interests of their constituents ought to be protected by members, even though by doing so they might be deprived of the free passes which they now enjoy. In the old world, the railroad companies are compelled to carry freight and passengers at fixed rates. They are not permitted to oppress the people, but are made to serve them.

There is no subject of deeper or more immediate interest to the agriculturist than this to which I have referred, and in no way can the agricultural press benefit the agriculturist more than by contending that the grievous burden of *way* freights should be made lighter.

FAIR PLAY.

For the Southern Farm and Home.

Lucerne.

MR. EDITOR—It is only by *dingdonging* that we can make our farmers adopt anything new. For a long time they could not be made to believe that it was not the best way to carry grist to the mill, to put the corn in one end of the sack and a rock in the other. *Dingdonging* has shown them that carrying corn in the other end will pay better than the rock, and balance the load just as well. So it will be as to lucerne, millet, clover, root crops and sheep-raising. If you keep it up, they will see it at last, and the truth will prevail. Now is the time to ring the changes about lucerne, the best and most profitable of all the forage crops, clover not excepted, for our people. If each farmer would set aside but one acre of his best land for this crop, break it as thoroughly as possible, buy fifteen pounds of sound seed, costing from sixty to seventy-five cents a pound, and sow it this month in drills just wide enough apart to allow the cultivator to pass between them, so as to keep down grass and weeds, he will secure for himself a sufficient supply of green food and hay to support four mules during the year, and thus help out the fodder crop materially. The first year it will yield three good cuttings, and if top-dressed in the fall every other year with a rich compost, or with two hundred and fifty pounds of superphosphate of lime, it will continue to yield four or five tons of superior hay for seven or eight years without any further outlay of

money or labor. I do not restrict anybody to one acre. I would advise your readers to sow several acres in lucerne; but I know that if I can get people to try one acre this year and plant and cultivate it properly, they will extend the area next year. It must be remembered that lucerne must never be pastured. It must be cut for soiling (feeding green) or for hay. When used for the former purpose it is better to cut it the day before it is to be used, and allow it to wilt.

It is no use to try to raise it on poor land, or on any land unless, until it takes possession of the soil, the weeds and grass are kept cleaned out.

DINGDONG.

For the Southern Farm and Home.

Saving Manure.

MR. EDITOR—Already is the air in the vicinity of our railroad depots impregnated with all sorts of *ammoniacal* (that is the correct word, I believe,) odors, emitted by piles of sacks and barrels of various compounds known as "commercial fertilizers." Indeed it has become a matter of rivalry between counties which has used the greatest number of tons of these compounds, and I saw it stated not long since in a newspaper as an evidence of the enterprise and progressive spirit of a certain county not a hundred miles from where I write, that it had already imported — hundred tons of guano for this year's crop.

My occupation obliges me to travel considerably in the country away from the lines of railroad, and I visit numbers of the farms where these fertilizers are used, and I do not know one of these farmers who makes any provision for saving manure at home—who gathers one-tenth part of what he might gather. The liquid manure is all wasted on these places, one-half of the solid is dropped about in the old fields and really wasted, and the other half which is made in the stables and lot, is pitched into a heap near the stable or in the lot, to be leached by every rain and scorched by every ray of sun, until it loses half its strength.

Now, sir, I am not hostile to "commercial fertilizers." On the contrary, I believe in them strongly when they are made by honest men and are genuine. When used with judgment compounded with reference to the wants of the soil and the "plant food" adapted to particular crops, they are very beneficial. But what I complain of is the laziness and improvidence which allow tons upon tons of the very

best manure to waste, which could be gathered at little or no cost, and which run in debt for thousands of dollars to buy the commercial fertilizers. There was one place I visited not long ago where the sills and weatherboarding of what was once a fine stable, were rotted by the manure which had been thrown out of the window and allowed to lie there for months and years, and I found that the owner bought every year a large number of tons of superphosphate at seventy-five or eighty dollars a ton, while he allowed several tons of equally valuable manure to serve no purpose but decay the timbers of his stable. It is this improvidence that I condemn, not the use of the manufactured or artificial manures. Let counties vie with each other as to which shall make the largest amount of manure at home and shall make the largest crops, and I will have some faith in the enterprise and progressive spirit of the farmers.

ROCKLAND.

NORTHEAST GEORGIA, February 4, 1873.

For the Southern Farm and Home.

Effect of Tar on Fruit Trees.

EDITOR SOUTHERN FARM AND HOME—I wish to state a curious effect of tar upon fruit trees which came under my observation this year, and hope it may prove a warning to all your readers, who may think of painting trees to prevent the hares or rabbits from barking them, or for any other purpose. These trees were painted from the ground upward one to two feet; and almost every tree—apple, pear, peach, quince and all—ceased to grow *where painted*, while that part of the body *above the painted portion* continued to grow, expand and thrive as though nothing had happened—bark, branches and leaves, all looking very thrifty. A few of the trees died suddenly while in full leaf; the others are now fine-looking above, but the body, where the tar covered it, looks as though it had had a laced jacket of iron around it for one year, and is a half inch or more less in diameter. I think the whole orchard will finally die; for some of the trees, from weakness of stem below and the growing weight above, are toppling over. Does this not show that the entire *bark* of a tree, as well as the leaf, is an organ of respiration? I shall continue my observations and give you the result.

I remain sincerely your fast friend and humble servant,

R. N. J. WILSON.

COLDWATER, MISS., January 26, 1873.

For the Southern Farm and Home.

Cotton Weights and Losses.

MR. EDITOR—For nigh unto thirty years I have been shipping cotton to New Orleans, and since the war to Memphis, and during that time have heard much of cotton shrinking and losing weight by drying out in the extremely dry and arid atmosphere of our cotton marts.

Well, I did not believe much of it, and as my cotton had fallen short of my weights from 1 to 95 lbs., I concluded I would weigh the first bale that I ginned out and store it away under a dry shed, where I could weigh it every week. To make the story short, the bale weighed when first baled, in October, 471 lbs., on 1st December, 475, having gained 4 lbs. It is true that under my shed is hardly so dry a place as the bluffs of Memphis, and we all know how very rainy last fall was. Below you will find statement of cotton shipments for 1870, 1871. You will see that there is much difference in weights at the gin and at the cities when sold. My scales may not be correct, but they don't vary:

Date of Shipment.	No. of Bales.	Loss in lbs. per Bale.	Gain in lbs. per Bale.
1870—December.....	19	13	
January.....	5	12	
“.....	7	3½	
“.....	9	4	
“.....	6		1
February.....	13	11½	
“.....	4	2½	
March 22.....	4	7-3-5	
“ 25.....	9	17½	
April 4.....	8	31½	
“ 4.....	5	37½	
“ 4.....	4	45½	
May 16.....	21	18½	
June 1.....	9	15½	
“ 15.....	12	9½	
“ 25.....	5	2½	
July.....	17	18½	
1871—September 26.....	1	23	
October 25.....	9	4 2-9	
“.....	6	3 5-6	
“.....	5	1 4-5	
“.....	3	3½	
December 1.....	4	24½	
“.....	1	7	
January 16.....	7		8
“.....	3		20
“.....	1	105	
“.....	4	2¼	1¾
“.....	3		3½
“.....	1	7	
“.....	4	½	
“.....	1		39
“ 20.....	2	2	
“.....	8	9¾	
December 16.....	1	60	
“.....	1	20	
1872—February 9.....	7	17½	
“.....	1	28	
“.....	4	19½	
“.....	3	13½	
“.....	4	15	
“.....	2	20	

You will see from this statement that there is something radically wrong, and the loss to

the planter is terrible; cotton is left exposed in the streets and open sheds, and this being the case, factors should be held responsible for all loss; and if planters will all have a pair of balances attested, and weigh carefully, I think the evil can be remedied. BROOMSEDGE.

ARKANSAS POST, ARK., Jan., 1873.

For the Southern Farm and Home.

The Feeding and Treatment of Horses.

MR. EDITOR—In no part of the world is the horse, the noblest, truest and most valuable of domestic animals, so extravagantly and yet injudiciously fed and so barbarously treated as in these Southern States. We are fond of horses too, but notwithstanding this and the high price they cost, I repeat, nowhere are they so much neglected as with us. Not one man in fifty pays any attention whatever to the comfort of his horse. The stable is wretchedly cold in winter, and in summer, being rarely cleaned, reeks with the effluvia of putrescent manure. After a hard day's work, the owner instead of seeing to it himself that his horse is properly fed, has a clean soft bed, is thoroughly cleaned and dry, and his stiff joints and tired legs well rubbed and refreshed, generally leaves him to a negro, who puts him into the stable as soon as the master's back is turned, without cleansing or rubbing and without a bed, and thinks his whole duty is performed if he throws a few ears of corn in the manger and crams a rack full of hay or fodder.

It is true as gospel that good cleaning is half feeding. I do not care how highly a horse may be fed if he is not well cleaned and his comfort considered, he cannot thrive. And nothing will ever get a negro to give this care unless the owner gives his own personal attention to his horses and their stable. See that the stable is comfortable, clean, airy, well ventilated, warm in winter and cool in summer. See that the horses are watered regularly, and that every morning, noon and night they are cleaned and rubbed.

For feeding, I have found that chopped fodder or hay, mixed with bruised oats or corn and sprinkled with a little salt and water is the most economical and most wholesome food on the long run; but I have found that a change of food now and then is beneficial. I am opposed to the corn and fodder system from January to December. It is the most expensive and not the best. Oats, well cleaned, are the best grain for horses, whether they do hard or

gentle work, regulating the quantity according to the nature of the work. During the summer, clover or lucerne, cut one day and allowed to wilt and fed the next, is excellent food, and unless the horses are doing very hard work, they will need very little grain to keep them in good condition, provided, always, as the lawyers say, the cleaning, watering and stable comforts are carefully attended to.

I believe it was an essentially lazy man, or more probably a negro, who invented the bundle of fodder and a dozen ears of corn thrown in the manger, as a way to feed a horse. Certainly good economy and regard for the horse condemn it. Sound oats are the healthiest grain, and when they are bruised, that is, ground very coarse, with hulls and all, and fed with chopped hay or fodder, they make the best possible food.

I will write you again about the cruelty to horses of ill-fitting harness, bad saddles, &c. Look at the work animals on a majority of places when the crop is laid by—see the galled shoulders and breasts, sore backs, welts and scarred bellies and rubbed flanks, and you will see what I mean.

A DISCIPLE OF BERGH.

NEAR CHARLOTTE, N. C., February, 1873.

For the Southern Farm and Home.

Pear Blight.

MR. EDITOR—The great drawback to pear culture is the blight, by which, as it were in a night, the thriftiest and most flourishing trees are stricken and killed. I see a great deal written in the agricultural papers on this subject. Every one tries to account for the disease in his own way, and some of the more adventurous prescribe remedies which they pretend are infallible. The fact is, the pear blight is "one of those things no fellah can find out." One says that a clay subsoil is the cause of blight, and that when the roots strike it the tree perishes. Another says that no pear tree will thrive except the subsoil is thoroughly drained, and that when the roots reach the wet soil the blight ensues. Another pretends that stirring the soil round the roots and cultivating any crop, such as cotton or potatoes, in the pear orchard, causes the blight. This is not the case, however. I have seen the finest pear trees I ever saw growing on the stiffest and most retentive clay soil. I have seen luxuriant pear trees growing directly over a spring; and I have seen as healthy trees as could be

desired growing on soil which is cultivated and stirred every year for a "hoed crop." It would be a grand thing to discover the true remedy as it would be to discover a remedy for rust in wheat; but I am satisfied no one has as yet discovered it. The best remedy I know is to dig up and burn the blighted tree as soon as possible, and the best preventive I know is to dress the trees every year with a compost of woodsear and ashes, or with bone dust, which, of all the artificial manures is, in my opinion, the best for all sorts of fruit trees.

SECKEL.

For the Southern Farm and Home.

Granges; Crop News, &c.

MR. EDITOR—The organization known as "the Patrons of Husbandry," is fast extending itself over the South, and forming local lodges or "granges" in the various counties of the States.

If the "granges" can be kept within their legitimate sphere I think they may be made very useful to the agricultural community.

Their chief object, as far as I understand it, is the protection of the interests of the cultivators of the soil, by securing to the producers the full value of their products and full value for their money in the articles they purchase. Cheap transportation to and from the leading markets, doing away with commissions to agents for selling and buying, are among the principal features of the organization, and as monopolies and rings are the order of the day, why should not the farmers have a ring to defend their interests from aggression and spoliation?

I do not believe, however, that they will find it easy to regulate trade and supplant the middlemen. This is a rock on which many co-operative societies have split before.

I am much in favor of the organizations, and am satisfied if practical men get hold of them they can be made of incalculable benefit to the Southern planter, but I fear we are so theoretical and impractical that this generation will have to pass away before we can do much.

Let me suggest that you establish a crop column in your paper and get a correspondent from each county, who will give you a monthly report of the crop. The reports can all be condensed in a few lines for each county. What I mean is, the condition of the crop, the weather, amount of land in cotton compared with the year before, also corn, and if the people are paying any attention to grass.

Impress it upon your readers and all Southern farmers, that grass and plenty of it, with plenty stock to eat it is the only salvation of the South, and the only road to wealth and something like a decent living.

I will soon send you an article upon the renovation of soils in the South, and it is my belief that the agricultural journals do harm rather than good when they speak of making manure. We do not stable enough cattle to do it. The only way is to grow green crops, feed them off the ground, turn under what is left, put in another green crop and turn it under, and, my word for it, there is not an acre of land in the South but what can be made rich without a cent of cost.

J. H. M.

English Blue-Grass.

Our friend, Mr. John B. Poyntz, the well-known stock-raiser of Maysville, Ky., mentions in a private letter of recent date, a grass which he calls English blue-grass which he has upon his farm, and which he considers superior in many respects to the famous native blue-grass of Kentucky.

Mr. Poyntz kindly offers to send us a sufficient quantity of the seed to sow three or four acres with a view to our distributing it among our farmer friends that they may try it and report the result. We have accepted the generous offer, and will be glad to divide the seed among those who are willing to make the experiment, on the sole condition that they report in the fall their success or failure for publication in the FARM AND HOME.

We publish the following extract from Mr. Poyntz's letter:

"I would be glad to furnish you a sample of grass seed for pasture. I have a field of this grass sown twelve years ago and it is the best pasture in this county now, and I am in the 'Blue-Grass Belt.' It is called here 'English blue-grass,' and is preferable to the native in many particulars. It starts earlier in the spring, grows more rapidly, stands drought better and never sunburns, is as green as rye all the summer, and is good grazing all the winter. I have four hundred acres of it growing and only one hundred of our native blue-grass. It will grow on any kind of land we have—rich or poor, wet or dry. I would like some of your friends in your county to make a trial of it. I will furnish you seed for three or four acres, which you can distribute among

those who you know will sow it and report the result to you for the benefit of others. The seed should be sown in the spring on any kind of small grain. Respectfully, &c.,

"JOHN B. POYNTZ.

"MAYSVILLE, KY., February 1, 1873."

For the Southern Farm and Home.

Remedy for the Cut-Worm.

MR. EDITOR—The ravages of the cut-worm in our corn crop are frequently very great; cause much loss of time and labor in replanting. Did we all plow our corn-lands in the fall, and not put it off as most of us do till late in the winter or the beginning of spring, the cut-worm would not be so destructive; but, as it is, the labor of replanting from this cause is often equal to that of the first planting, not to mention the damage to the crop by the lateness of the replanted portions. I know of no remedy so effectual as early plowing. Steeping the corn in coal tar is only a protection against animals that eat the seed. It is no protection against the worm. Some years ago, a neighbor, who was a farmer of long experience and who was very successful, told me how he guarded against the cut-worm. He made a mixture of ashes and plaster, two-thirds of a pound of the former and one-third of a pound of the latter, and after the corn was covered, made a hand follow the coverer and drop a handful of the mixture on each hill. I have tried this remedy and have found it invariably successful. One year that the cut-worm threatened to ruin my crop, I applied it to check the work of destruction and it acted like a charm.

I have no doubt, as my friend who gave me this remedy, was not an inventive or adventurous man, that it is known to many persons, and that I am writing what many of your readers know already. But I am sure it is not known to everybody, and that some who knew it have forgotten it, therefore I mention my experience for the benefit of the ignorant and the forgetful. Even if the proposed remedy be no remedy at all against the cut-worm, and I have been mistaken, to try it will do no harm. On the contrary, it must do good, as the ashes and plaster will certainly promote the growth of the corn plants and increase the yield. But I believe that if the ashes and plaster in the proportion I have indicated are applied to each hill of corn, the cut-worm will be routed and the cost of replanting will be saved.

DINWIDDIE.

For the Southern Farm and Home.

Treatment of Milch Cows.

MR. EDITOR—Whether it be considered better or not to keep milch cows stabled all the year and feed them on cut food, there can be no doubt that it is the only way to feed them during winter, if we have any regard for the cows or any desire to have plenty of milk. A good, comfortable stable, and plenty of wholesome food and water are essential. But are they always provided on Southern farms? Because our frosts and snows do not last as long as at the North, are we not led to imagine that our cows can "get along without much of a stable," and that they can "pick up right smart on the pasture?" We delude ourselves, however, and besides having a scanty allowance of milk of inferior quality, when we might have a plenty of good, rich milk, we commit an act of cruelty in allowing our cows to shiver and starve during such weather as we have had during the months of December, January and a part of February. It does not cost much more than the things we call cow-stables to have warm, well-lighted and well-ventilated stables, with roomy stalls for each cow, clean mangers, and a clean, warm bed. Then we know that there is no pasture which yields any nourishment at this season, even if the weather was genial, and if we will tell the whole truth, we must admit also that that portion of a Southern farm known as the "pasture" rarely abounds with food at any season of the year.

Humanity prompts us to feed our stock during the winter, and if we feed at all we should feed well. We ought only to keep the number of head we can feed well. But feeding well does not mean only abundant feeding. It means regular feeding and watering. Just before day the cows should be fed with as much hay as they can eat up clean (they should never get any more), and if there are any turnips or mangolds on hand, a peck of them to each cow with the hay will be found to pay well. After they have done eating they should be turned into the lot to water, and in the meantime the stable should be cleaned and the bedding stirred and renewed. At noon they should get another smaller feed of hay, and in the evening, between four and five o'clock, they should be turned into the lot again and watered, the stable cleaned again and similar food to that given in the morning, and a like quantity, placed in their mangers for the night. Before

they are put up, unless the weather is very cold, they should be milked. If there are no turnips or mangolds, a couple of quarts of cotton-seed meal is a capital substitute, or a mixture of turnips and meal, so as to make of the two a feed equivalent to what has been prescribed of either by itself, would be better still. Dry straw, corn-stalks pulled from the field where they grew, and other things known under the comprehensive name of "roughness," are of no value. They may be filling, as the dried apples and water were to the boy, but they do not nourish, and no sensible cow would touch them were she not satisfied that it was "that or nothing." A lump of rock-salt should be left in every cow's manger.

One thing more and I am done. Cows kept in the stable all the winter should be carded at least once a day. It is astonishing how this conduces to their health and thrift. It takes but little time; it is cleanly; prevents vermin, and promotes health just as currying benefits a horse.

If we would treat our cows thus, and use them kindly both in language and gesture, we should not buy so much butter and cheese, and our "cow-lots" would not present the pitiable spectacle they do on a cold frosty day.

REFORM.

LAUDERDALE Co., Miss., February, 1873.

For the Southern Farm and Home.

A Screw Loose Somewhere.

MR. EDITOR—There must be a screw loose somewhere, it strikes me, when I hear so many farmers who work hard all the year exclaim at the end of it "we have not made anything." These men toil from January to December, live poorly, deny themselves every enjoyment, and yet, when they close the year's operations, they count themselves lucky if their crop has "paid them out." I know there must be a screw loose, and I think I have discovered where it rattles. I believe that the difficulty consists in the distrust and dislike which farmers feel toward all improvements, their tenacious adherence to "the way daddy done," and their obstinate refusal to be enlightened. They seem to think that physical labor alone is necessary to make a good farmer, and that brain labor—study, enlightened skill—is a fancy notion, only entertained by "book-farmers." Now, sir, how can we expect a man who never reads an agricultural book or paper, who never tries to learn the experience of

others by association with them, who lives always to himself and by himself—to succeed in this age of steam and telegraphs?

The farmers who win rely more on their brain than their muscle. They read and study closely. They keep posted as to all that is going on around them which concerns their business. They see and comprehend the means by which the agricultural and industrial triumphs of the age are wrought, they see how useless it is to attempt to jog along in the old ox-wagon fashion, and they go to work and study so as to be abreast of the foremost in the agricultural race. The loose screw is ignorance. Apply the washers of study and associations, and there will be no more rattling—no more squeaking, “farming do n't pay.”

Read more, brother farmers, study more, go out and see and talk with enlightened people more. Give some thought to your business and less manual labor, and you will do better. “Knowledge is power.”

GEORGIA.

MUSCOGEE Co., Ga., Feb., 1873.

For the Southern Farm and Home.

A Cotton Seed Huller.

MR. EDITOR—A machine which would hull our cotton seed on the plantation, and which could be run with the same horse-power that runs a gin, would be a great treasure. We could then turn our cotton seed to the best account and at the least cost. But though I have seen descriptions and advertisements of machines which will do all that is required, and even more, I have never seen a machine that was not a complete failure. I am thinking particularly at this moment of a cotton seed huller patented by a gentleman from Georgia (I do not mention his name, as I do not wish to be invidious), which has been advertised and puffed and illustrated as a *ne plus ultra*. I was told it would run easily with one-horse power, that it would hull upward of two hundred and fifty bushels of seed in a day, that it never clogged or got out of order, seldom wanted sharpening, and that any ordinary boy could manage it. This may be so, but it has not been my experience, nor that of any one I know who has tried this machine. On the contrary, quite the reverse. It requires a great deal of power to run it, hulls at the outside seventeen or eighteen bushels in a long day's work, gets clogged every few minutes, the knife becomes dull in a few hours' use, and at its best does the work of hulling imperfectly.

I regard the money expended in the purchase of this machine as a dead loss, and it is to guard others against being disappointed, I write to advise those who think of buying a huller to see it tried before they give their order and pay their money. See it tried, not at an agricultural fair, where the machine is run with the power which propels all the machinery on exhibition, and where the owner is present with a full supply of knives and all other parts of the machine at hand to supply any defect at once, and make it appear as if always in perfect order. We ought to buy labor-saving machinery and the best implements of husbandry, but we ought to be careful that we get the genuine article, not the many ingenious humbugs which are daily presented to us by bidders, and are absolutely worthless.

ECONOMIST.

NEAR WETUMPKA, ALA., Feb. 3, 1873.

For the Southern Farm and Home.

Stock Raising.

MR. EDITOR—If the farmers of Kentucky find it pays to devote themselves almost exclusively to raising mules, horses, fine cattle and sheep on their lands, which are so much higher in price than the best lands in the cotton States, why should it not be profitable for us on our cheap lands to go into the business? Our climate is as good, we can raise corn, oats, grass, clover as well as in Kentucky, and we certainly have land enough and to spare.

If we do not mean to take the trouble of raising the mule colts, we can do as many Kentucky mule raisers do, buy yearling colts in Ohio or Indiana at from \$50 to \$75 per head, take them home, feed them liberally, and at three years old have mules for which we now have to pay the drover \$200 a head. Liberal feeding and well bred stock constitute the secret of successful stock raising.

I am strongly in favor of our trying to raise our own stock of every description, but if we want to make the business pay and compete successfully with the professional stock raisers of the blue-grass region, we must discard the scrubs we now have, and introduce the breeds of cattle which by high feeding will be prepared for market and for home consumption at the earliest period. To raise hogs with the greatest profit they should be ready for the butcher at twelve months old at the furthest. This is impossible with the saw-backs of our piney woods.

T. W. C.

For the Southern Farm and Home.

Gypsum on Clover.

MR. EDITOR—You are and always have been a warm friend of clover. Doubtless many of your readers, taking your good advice, have sown clover patches and are now enjoying their benefits. Let me advise all clover-raisers to provide themselves at once with some ground land-plaster or gypsum, and to sow it on their clover fields at the rate of a bushel, or a bushel and a half to the acre, just before the clover begins to put on its new leaves in the spring. Those who try it will be astonished at the effect it will have upon the growth of the crop. The cost of the gypsum is small, and the labor of scattering it amounts to nothing.

TREFOIL.

MAURY CO., TENN., February, 1873.

For the Southern Farm and Home.

Millet.

MR. EDITOR—Let me say a word or two in favor of this excellent forage plant, which you gentlemen of the agricultural press are beginning to overlook in your partiality for clover, lucerne, &c. I rejoice to see your efforts to encourage the raising of forage crops in abundance, but I want millet to have a fair showing. I have raised it for two or three years, and I know nothing superior to it for cut green food and for hay. I have also raised drilled corn for forage, but it can not compare with millet. The seed costs little or nothing, and the crop requires hardly any cultivation. On good soil—not too dry—it will admit of being cut two or three times for green food and then mature a fine crop of hay which stock of all sorts eat greedily.

CAT-TAIL.

SUMTER CO., GA., Feb., 1873.

For the Southern Farm and Home.

The Renewal of Seed the Best Preventive of Rust in Wheat.

MR. EDITOR—In a recent number of your paper a contributor writing about rust in wheat stated that using seed grown in a distant State, under different conditions of soil and climate, was the most effective way of guarding against rust. He was right, according to my opinion and experience; but he is by no means entitled to a patent as a discoverer. In Flanders, for years and years, the old farmers have regarded a renewal of seed as a preventive of rust and all other maladies to which wheat is heir, and Mr. Robert Barclay, of Ury, in Scotland, one

of the most eminent agriculturists of his day, was in the habit, fifty years ago, of importing his seed wheat from England every year. I do not mention these facts to detract from the value of your correspondent's advice, but rather to prove its wisdom, because fortified by the experience of the ablest and most successful wheat raisers of the old world.

ANTI-RUST.

CHESTERFIELD CO., VA., Feb., 1873.

For the Southern Farm and Home.

The Labor Question.

MR. EDITOR—I notice the St. Louis *Democrat* and Memphis *Avalanche* have some rather severe criticisms on the *Appeal*, for remarking "that it was the duty of land-owners to hire white help, and drive the negro to the Gulf coast." Well, probably they have no right to drive them from the country because they voted against us, but they have the right to protect themselves, and to build up a country in which they and their children can live in peace. They have the right to draw around them a class of people with whom they and their children can associate—a people who have pride enough to build up instead of tearing down our country. They have the right to employ labor that has intelligence enough to use labor-saving machinery—who has some idea of honesty, to restore a country where a farmer can raise hogs, chickens, &c., without the certainty of having them stolen. To do this we must hire good, intelligent white laborers, and make it their interest to come and stay when here.

ST. MARK.

ARKANSAS RIVER, February, 1873.

For the Southern Farm and Home.

Cultivation of Rape for Sheep.

MR. EDITOR—There is a crop which is entirely unknown, I believe, at the South, which is raised on a large scale in England and in British North America, as a first-rate food for sheep. I allude to rape. It belongs to the cabbage tribe of plants, and is a sure crop. I do not know how well adapted it would be to our soil and climate, but I believe it would do very well if grown on well-prepared land of good quality, and cultivated with the same care that is given to turnips, where turnips are regarded as a valuable crop.

Would it not be well for somebody to make the experiment whether rape would succeed in our country? In England the seed is sown late in the spring, in drills about a foot apart.

Three or four pounds of seed are sufficient for an acre. The plants are allowed to stand thickly in the drills, and the crop is eaten down in the field by turning sheep in as soon as the plants are nearly grown. In the South, where the frosts are not too severe, the plants would live through the winter and thus give abundant food for sheep.

Rape has the advantage over turnips that it will grow in land too wet for turnips, and besides, I think that it fattens sheep more rapidly than any of the root crops. NORVAL.

February, 1873.

For the Southern Farm and Home.

Cultivation of Cotton.

MR. EDITOR—By your permission I will submit a few thoughts on the cultivation of cotton, as that is the staple of our "Sunny South." Since cotton has been selling at what is deemed a remunerative price, every planter, as well as farmer, has been trying to raise it. As you have often wisely counseled, the farmer should not neglect his provision crop by increasing his acreage in cotton. My object in writing this brief article is to make some suggestions as to the best mode of cultivating a cotton crop (others may have a better, but from observation I am satisfied that many have not as good, if indeed any mode at all,) in the northern section of the cotton region. First, plant no land that is not drained either naturally or artificially; fertilize with home-made manures as far as possible, bed nicely on a level, rows three feet wide on ordinary land; plant with a planter, so as to have the drill straight and narrow. Commence, if practicable, about the tenth of April—never mind the frost. As soon as the first seeds begin to crack the ground, run over the bed with an iron-toothed harrow—V shaped—containing nine teeth; if once over the bed does not completely renovate it, run twice—no danger of destroying the cotton. This secures a perfect stand, and makes a clean bed to stand on. This is the most important working during the whole season. Run round it with a sweep or scraper, large enough to clean the middle, cut it out to a stand as soon as the third leaf appears, from eight to twelve inches apart. All the plowings should be shallow and repeated about every sixteen days, until fodder pulling time. Late working matures the top crop, and does not cause it to shed if done very shallow.

CHEROKEE.

FLOYD SPRINGS, GA.

Premium Essay on the Treatment and Cultivation of Corn.

Read before the Southern Central Agricultural Association.

BY JAMES M. CHAMBERS

It would seem that with a crop with which we had been so long familiar, and which enters so universally into the products of the farm, nothing new would remain to be disclosed, and that practice ought long since to have made us acquainted with all the best modes of culture. My observation, however, has but served to convince me that no crop has been subjected to more neglect, and none has been more left to the mere risk of chances, circumstances, and the accidents of seasons, than corn; especially in the agriculture of the South. When inquiry has been indulged in at all, it has been rather to find out the shortest and cheapest, rather than the best modes of preparation and culture, and that we have been indebted for success rather to a kind Providence, and a generous soil, than to any skill or understanding of our own in bringing about the result. It is true that without these aids we could not hope for success; but our objection is to a reliance so exclusively upon them, and our purpose to show how we shall better succeed in co-operation with them.

I lay it down as indispensably necessary to anything like perfect success, that first of all good preparation should be made before planting; that the land should be thoroughly, deeply, and closely plowed, forming a deep, mellow, and well-pulverized bed, which will allow any excess of rain water which may fall upon the surface to settle readily deep into the earth below the deposited seed—which will permit the warming rays of the sun and the healthful gases of the atmosphere to penetrate, and through which the young roots, so abundant in this plant, may spread out early and easily in search of requisite food. This preparation, as already intimated, must be made with the plow. The time of doing it, and the particular kind of implement to be used, and the depth to which the land is to be broken, must be determined very much by circumstances, the character of the soil, &c., and must be left somewhat to the discretion of the planter, to be varied to suit the circumstances of each case—securing the object, deep and thorough preparation. It must be admitted that very good crops are often made with less preparation. These deficiencies are sometimes made up by after culture. Yet no one may safely presume upon the opportunity to do this; nor can we claim to have done our whole duty when we leave for to-morrow the doing of those things which ought to have been done to-day. Many regrets and many failures have resulted from the want of these timely preparations.

The next question in the order of inquiry is as to the *Mode of Planting* and the best *Time* for doing this.

In a climate with summers as long and hot as ours, and where drought so frequently oc-

curs in these hot months, it is of indispensable importance that this crop should be planted just as soon as the frosts may be avoided. And it may be remarked in this connection that this plant, though tender, is not easily killed to the root, and the mere nipping of the young leaves of the corn does not materially affect its ultimate yield, and that we should not therefore be deterred by any of these apprehensions from early planting.

The *Depth of Planting* is an important consideration.

The roots of corn are almost all lateral and come out near the surface, and it is therefore a matter of great importance to have the seed well deposited in the ground. To do this the opening furrow for planting should be deep, so that the tendency of all the after workings would be to increase the depth of earth upon the roots. The seed, when deposited in this furrow, should be covered to the depth of one and a half to two inches with soft, fine earth, placed there by the plow or hoe—the latter I think best. Three or four grains should be dropped, when only one is to be left, it being much better to thin out than to have to replant.

It is a debatable question, and therefore one about which there is a difference of opinion, as to whether the *Hill* or *Drill* planting, or the one or the two stalk system is the best. Circumstances must necessarily enter very largely into the settlement of these questions, and, after all, the discretion of the planter must be often left to settle them. My theory and plans are made to suit the common uplands of the country, and may therefore be departed from as occasion and the difference in lands may require. Upon this basis I shall take hill in preference to drill planting, because of the greater regularity of distance, the greater certainty of a perfect stand, and the greater ease with which it may be cultivated; and prefer one to two stalks in the hill, because it is more easily cleaned with the plow or hoe—better sustained, as the one receives all the food from the soil which would otherwise be divided—because it will bear drought with less damage—and finally, though other plans may produce more ears, those on the one stalk will be larger, equal in quantity, and better in the quality of the corn.

Having settled the preference for one stalk in the hill, the *Distance* remains to be given.

I should advise the checking to be four and a half feet one way by three and a half the other. I should then expect to make the crop after this preparation with three plowings—the first to be given the narrow way of the rows and the two last the wide way. The crop is now planted, and a very important branch of the work is disposed of.

The *Mode of Culture* remains to be told. I will preface that part of my essay with this remark: that however much other things may admit of delay and neglect, that the corn crop never recovers from injury of this sort. It requires to be worked early, rapidly, and to be disposed of soon. As soon as the third and

fourth blades have made their appearance let the operation be commenced. The plow running next to the young plant should be narrow and long, so that the earth may be broken very deep and close to the young corn, and yet it not covered. The best plow in common use for that purpose is the scooter or colter. The latter, in lands that are at all tenacious or close, is decidedly preferable. If this operation is as complete as it should be, all the earth about the roots of the plant will be loosened; and when the middle of the row shall have been also broken deep and close, the young roots, which soon shoot out in great numbers in search of food, will easily penetrate the soft earth and find their appropriate supplies, and impart health and vigor to the young stalk. The hoes should follow the plows in this operation, perfecting the work by thinning to one stalk, and giving the hill a nice dressing, leaving it perfectly clean, and returning a little more earth to the root of the corn. In about twenty days or three weeks the working should be repeated. If the plow work has been very thorough at the first operation, it need not now be quite so deep or close as before, but nearly so, using some plow next the corn which will tumble the soft earth about the roots, covering all small grass and saving much labor to the hoe hands.

At this time the hoes should pass over again, thinning out all surplus stalks, pulling off suckers, straightening the bent stalks, and making clean all which the plows may have failed to do. In three weeks more the third and last working should be given. This is an important crisis, and much must be committed to the judgment of the operator. No work requires the exercise of a sounder discretion than that to be given to corn in this advanced stage and hot season. Ordinarily the work should be much more shallow and less close than the former workings, using some plow which should not penetrate deep, but which would leave the surface as soft and smooth as possible. To make the corn perfect, the hoes should pass over again and make all complete and clean. But if ample justice had been done in the former workings, not much will remain now for the hoes to do. Before the commencement of this last plowing sow broadcast with peas, about ten or twelve quarts to the acre, and the work will be complete. In every working to be given the corn it would be greatly preferable to have the ground wet, or rather in good moist condition; but it is bad policy ever to delay these operations for more than two or three days at most to wait for the seasons, holding the maxim that, "He that regardeth the wind in seed time shall not reap in harvest."

I close my treatise by a few remarks on the *Selection of Seed Corn*.

The better plan is to make the selections in the field, taking the largest and best filled ears and from the best bearing stalks. Much improvement may be made in this way. But even here we may run into an error by looking too exclusively at the number of ears without regard to the size. It is a pretty well-ascer-

tained fact, that almost in the same proportion in which the number is increased the size of the ear is reduced. I should prefer neither the soft gourd seed nor the hard flint corn, but a sort of medium between, combining in one the advantages of both, with a small cob and long grain. Seed from the butt end of the ear are much to be preferred, rejecting about one-third from the smaller end.

After closing my essay, it occurred to me that the *Saving of Fodder* was so intimately connected with the culture of corn that it might be expected that I should say something on that subject. I suppose I should hardly be excused for forgetting an old friend (especially by those who may differ with me), but I would gladly strike it from the catalogue, as I have no doubt that more injury is often done to the corn crop by injudicious stripping of the blades from the stalk than the whole crop of fodder is worth after it is saved; and I hope that the day is not distant when a substitute shall be provided in form of hay, made from the pea or some of our own Southern grasses, which shall save the planter from this most unpleasant part of his work, the corn from the chances of damage from such indiscretion, and give us for our stock a better article of food. It is indeed questionable whether the grain of the corn does not suffer injury from this operation at any time when there is sufficient greenness left in the blades to make good fodder.

As, however, we have not yet a substitute, I will offer some suggestions as to the time and manner of saving this crop.

The blades should never be stripped until the shrinkage of the grain has taken place; then they may be pulled, and either spread in the row or hung in small bunches on the stalk to dry. The latter is perhaps preferable, as it dries nearly as soon and is better protected in the event of rain. In about thirty-six hours it is generally sufficiently cured to be bundled and stacked. It should be put into bundles in the evening when slightly damped by the dew, or in the morning as the dew is drying off. It is then fit for stacking. If the fodder has been well cured it is best to be put up in large double stacks, as less surface is exposed to be damaged by the rains. But if not so well cured as to make this safe, let the stacks be made single, containing eight or ten hundred pounds. If sunshine should be scarce pretty good fodder may be saved with only a half day's sun by putting into small bundles, stacking in single stacks, and in a day or two, when it heats, pulling down and exposing to the air, when, as soon as it cools, it may be restacked, and will keep safely and make better fodder than that which has been exposed to the rain.

Upland Rice.

This is a crop which pays well, and should be more generally looked after than it is. If you live within easy distance of a rice mill, where you can get it hulled on good terms, few crops could be made to pay better; but if you do not, then it will still pay you to grow it as a feed crop, for it bears two cuttings in the

year below 32° north latitude, and makes a hay which sheep, horses, and cattle prefer to the best grass product grown.

We are promised a cheap rice-huller, to be offered for sale in a month or so, and costs little more than a coffee mill. The inventor claims that it will be well adapted to the wants of a family, and will enable the good woman of the house to grind out her mess of rice with as much ease as she would grind her mess of coffee. If "this turns out to be true," as Artemus Ward would say, we shall all be made up, and no farmer will be able longer to offer an excuse for not having plenty of rice on the table.

Sandy land is best for upland rice. It should be level, but it need not be wet. Give it sufficient fertility to insure from twenty-five to thirty bushels of corn to the acre, and break deep and thoroughly. If broken a month or so before planting time it will be all the better.

Bed up with a small plow, running two shallow furrows about twenty inches apart, throwing the dirt together. Mark off in the middle of the ridges thus formed, and sow in drills, covering from one and a half to two inches, just as you would cover cotton seed. The rows should be about three feet asunder.

When the rice gets up about two inches high, run the bar of the plow close to it and throw the dirt to the middle, leaving your rice standing on strips or ridges about six inches broad. If your ground is good you will have as promising a crop of weeds as rice. Get after these with a sharp hoe, scraping the top of the ridge entirely off to the depth of half an inch, removing weeds and rice together. In a few days the rice will be up again, and will take such a start of the weeds as to render them no longer troublesome. Throw back the dirt from the middle with a bull-tongue of a sweep, and when the rice is up six inches high, chop out leaving it in bunches the width of a hoe apart, with eight or ten stalks in a bunch. Run over the patch occasionally with a bull-tongue when weeds or grass show a disposition to start in the middles, and that is all there is of it.

Upland rice, on ground qualified to bring from twenty-five to thirty bushels of corn to the acre, will yield about fifty bushels of rough grain. In hulling this would lose about half, leaving you twenty-five bushels of clean rice as the product of an acre, or, say twelve hundred pounds. At ten cents a pound, the price you must pay for what you now use, you would have \$120 worth of rice, to say nothing of the straw, which, as a feed would be worth almost as much as the estimate put upon the grain.

These figures are extremely small, but we prefer being on the safe side. In the March number of his *Southern Farmer*, Dr. Philips puts down the yield of a well-managed acre at—

Rice.....	\$254
Straw.....	100

Total.....\$354

From this time on to the 20th of April is the proper season for sowing upland rice.—*Mobile Register*.

A Humorous Speech.

Our readers will doubtless give us credit for having kept our columns clear of politics. Among all our exchanges there is none so entirely useless to us as the *Congressional Globe*. On looking over a copy a few days since we found a speech of our old friend S. S. Cox, formerly of Ohio, now of New York city, *appropos* of the Commissioner of Agriculture, which we have been induced to publish to show how a joke may be made to defeat a serious and useful purpose. We do not approve the jibes and sneers which certain newspapers are constantly directing against the Department of Agriculture. We deem it a very valuable branch of the Government, and capable of conferring great benefits on agriculture if adequately sustained by Congress:

MR. CHAIRMAN—I think there is a good deal of undeserved reproach cast on the noble Department of Agriculture. The gentleman from Illinois [Mr. Farnsworth] undertook to say that the present Commissioner of Agriculture kept a *cuisine* to cook the seeds sent to him from all parts of the world. [Laughter.] Other members say he boards and lives in our Patent Office free of expense. I recollect when the Commissioner of Agriculture used to make butter for the Presidential Mansion. These were unctuous and happy days. [Laughter.] The gentlest cows of Pennsylvania furnished the milk, and there was no constitutional question raised on the cow. [Laughter.] I remember well that a former Commissioner raised strawberries for the Presidential Mansion. It is a part of the business of that bureau. [Laughter.] There is no question of its constitutionality. [Laughter.] It seems we are now to have in the Agricultural Bureau a microscopist! In fact it is a part of our new bureaucratic system. Bring in the microscope, that we may see the insectivorous animals which are preying upon and annoying this useful bureau. I am amazed that the House does not appreciate these reports on agriculture. The Commissioner, on the very first page of his report, tells us that the "segregated character of the rural population has been such as to forbid that concentration of ideas and consultation of views which are common to all other professions and occupations!" This is a species of "unabridged dictionary" language which fills the philological and analytical mind with wonder. But look to the end! The last page of the report advises us that we may save \$1,000,000,000 by dispensing with fencing! Let us be advised and even do better. Dispense with barns, stables and houses, and then we will be careful and happy. I admire economy—based on a concentration of rural ideas. Again, I turn to the Commissioner's report of November, 1871. I read from page sixty-nine. It is the report of the entomologist and curator! God help us to a faithful lexicon. We have just made a bureau of the microscope. My friend from Indiana (Mr. Holman) opposes it; and I never oppose him. What is this bureau?

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It is, in fact, the bureau of bugs! I deny that entomology as a science does not include all bugs, humbugs not excluded. [Laughter.] The Commissioner says that bugs are not insignificant insects, as they are generally and erroneously called. But, sir, they are bugs. Now, I always supposed entomology did refer to bugs. [Laughter.] The Commissioner gives the various modes of finding these bugs out. He tells you of the *adipoda atrox*, which I hope my friend from Ohio, (Mr. Garfield), who is now going away from my seat, after instructing me in Latin, will be able to explain to the House. [Laughter.] There are various other bugs referred to. We have the *caloptenus femurrebrum*, and the *caloptenus spretus*, and the *adipoda pellucida*, and the *anabras simplex*, and the *udeopsylla ropusta*, the *copiophora mucronata*, and the *plutella limbipennella*. [Great Laughter.] These are for the common mind. [Laughter.] Education forms it. Now these reports have been published at a great expense, and this information is of course intended for the common people. I hope gentlemen will be able to explain to the House what all these things are. [Laughter.] Let there be annotations go out with these reports, Mr. Chairman.

I would not be so particular in this remarkable nomenclature had we not been advised to-day by the honorable gentleman (Mr. Garfield) that it was the duty of the Federal Government, by its function of educator, to inform the common mind. He thought we should, by Federal authority and money, diffuse knowledge among men. I therefore boldly ask, where does he get power to interpret to plain and honest people the *caloptenus spretus* of Uhler? [Laughter.] Who shall determine, by Federal tests, the length of wing of the *caloptenus femurrebrum*? [Laughter.] I may admit, for sake of argument, that the learned and fresh men from the South may tell us why the *anabras simplex* is an orthopterus insect, but why do you invoke Federal powers to aid in this microscopic work? These are recondite thoughts and illustrations. We have in this agricultural book reference made to various other recondite things. I hope this bureau will not be discouraged in its work. We have here on one page—as you see—what seems a hydraulic ram; and then on another, in magnificent wood and type, the picture and description of the merino ram "Dictator." (See page 187.) These are put in the most extraordinary relation. [Laughter.] Look all through this book. Look at the pictures of these bugs. Look at these pictures of the *fungoid* series. Here we have the *fungoid spores*, found within a blighted lilac leaf; and the *mycelium* and other *fungoid* forms found on the *liber* of a tree having the "yellows." [Laughter.] Now, it is very evident when we send these out we ought to send out at the same time an interpretation of them for the benefit of the common people. [Laughter.] What have the people done that they should be crucified by such public reports?

And while we are meditating about the new microscopic bureau, I would like to take one

more glance at the book. Where, oh! where am I to find the proportions of the "Chester White sow," called Mary? [Great laughter.] Only one year old! Bring on your microscopic bureau. Observe the length of that inquisitive snout and the compound curl of that tail! [Laughter.] See the lengthening lusciousness of those lacteal glands! [Laughter.] But her name it is Mary! Is there a man who ever loved a Mary? [Laughter.] Let him construe our beloved Constitution. Perhaps there is some one here attached to the Constitution and to education will reproach me for not mentioning the *elaphidien vellosum*, or the *stenocorus putator* of Beck. [Laughter.] Will the Scotch member from Kentucky please explain this melodious terminology which bears his name? [Laughter.] But, Mr. Chairman, I have only risen for the purpose of having the House understand the astonishing effect of these agricultural reports, not only upon the people in the country, but upon the people in the city. I acknowledge that the effect is different according to locality. I now represent a city, though by some misapprehension in the last campaign the people of New York State outside of our grand metropolis voted for me to represent them. I fell short in the country. [Laughter.] To be sure I carried that city by some twenty-five thousand! Though I may not, owing to misapprehension, be with you next Congress [laughter], I must refer to the effect of these reports on the city. The effect upon the wicked city of Philadelphia, which acted so badly in the late election, [laughter,] is especially notable. I refer to it for the purpose of calling the attention of my friend from Philadelphia (Mr. Kelley) to the dreadful consequences he imposes upon his constituents in sending those reports into the heart of Philadelphia. Read very slowly, Mr. Clerk, the extract I send up from the *Sunday Dispatch*, of Philadelphia, showing the direful effects of these terrible reports. [The Clerk read (*con espressione*) as follows:]

"We owe our thanks to Judge Kelley for the latest Patent Office report. We already have sixteen hundred of these interesting volumes in our little library, but they have been read and reread so many times that we know every page of them by heart. This new volume came opportunely and gratefully on Christmas morning, and that night we gathered our little family around the fire and read it through to them. The affecting tale, entitled 'Improvement in Monkey Wrenches,' seemed to touch every heart [laughter,] and when we came to the climax of the little story about 'Reversible Pie Boards,' there was not a dry eye between the front door and the stable. [Laughter.] During the reading of the piteous narrative entitled 'Gum Washers for Carriage Axles,' the whole family gave expression to boisterous emotion, and the hired girl, was so much excited that she lost her presence of mind and went around to her mother's inadvertently with six pounds of sugar and a butter-kettle full of flour, and came home at midnight intoxicated. [Laughter.] We can never suffi-

ciently thank Judge Kelley for the innocent enjoyment thus furnished us. The memory of that happy evening will linger in our minds very much longer than that hired girl ever lingers when she lights on a lot of substance which she thinks will suit the constitution of her aged parent." [Great laughter.]

Experiments with Fertilizers.

Mr. J. S. Newman, of Hancock county, Ga., who is well known to us as one of the most enlightened and successful farmers in his State, has published the following report of experiments made by him during two years with several commercial and two home-made fertilizers, in which the home-made seem to have succeeded best:

REPORT OF EXPERIMENT WITH FERTILIZERS IN 1872.

Mr. President and Gentlemen of the Club:

At the January meeting of the present year, I was assigned the duty of contrasting the effects of commercial and home-made manures. I used two home composts—one according to directions furnished by Mr. Logan, in which 500 lbs. of Concentrated Soluble Phosphate is composted with 1300 lbs. of stable manure and 200 lbs. of ashes, added just before using. This makes an excellent manure, but is very troublesome to manipulate according to directions.

The other was a modification of the Bryan formula, using the following:

- 1400 lbs. Stable Manure.
- 300 " Superphosphate.
- 200 " Green Cotton Seed.
- 60 " Sulphate of Ammonia.
- 40 " Nitrate of Soda.

The cotton was planted on thin stubbleland, of uniform fertility, on which no manure had been used since 1867. The ground was thoroughly broken about the middle of February—the cotton planted in dust 1st May—remained thus without germinating until the 20th, when a stand was obtained, great care being taken to have the stand in all the rows uniform. It had good seasons until the 16th of June, but no rain from the last date till 6th July, during which time it suffered very seriously. From the 5th of July to August 15th, there was an abundance of rain, but from the last date to frost, 14th October, there was no rain.

Each manure was used under three rows, seventy yards long, three rows in the center of the plat being planted without manure. The center row of each set of three was carefully picked and weighed, with the following result:

Name.	No. lbs. to acre	Cost per acre	Yield per acre
Logan com.	230	\$1 38	675 lbs. a. c.
Home com.	200	2 00	720 " "
Nothing	00	0 00	495 " "
A. A. Ober	200	7 00	600 " "
Ober's Sup'hate	200	6 00	675 " "
Pendleton	200	6 60	705 " "
Zell	200	5 75	645 " "
Atlantic Phos'te	200	5 35	645 " "
5 comm'l mixed	200	6 35	785 " "

The results from three of the above manures last year were as follows:

Name.	No. lbs to acre	Cost per acre	Yield per acre
Zell	200	\$6 00	885 lbs. s. c.
Home com.	200	2 00	915 " "
Pendleton	200	7 20	900 " "
No manure	00	0 00	660 " "
Zell	100	3 00	885 " "
Home com.	100	1 00	885 " "
Pendleton	100	3 60	795 " "

It will be observed that the results of 200 lbs. per acre of the three manures which were used two successive years, with very different seasons, point to the same important fact, viz.: That manures having carbonaceous matter, in the form of humus, act better upon our soils destitute of vegetable matter, as most of them are by repeated cropping in corn and cotton, both humus destroying crops. The concentrated commercial manures act only chemically upon the soils, and having but little besides mineral element left in the soil to act upon, their effects are often disastrous in dry seasons. The Home composts act both chemically and mechanically, and are therefore better suited to the present condition of our soils.

There is another and more important lesson to be learned from these experiments. They plainly show the necessity of either a rational rotation of crops, including small grain and rest, or a resort to turning under green crops, such as peas and clover. I propose planting cotton in the same rows, without additional manure, next year, in order to test the comparative permanency of these different manures.

Respectfully submitted.

J. S. NEWMAN.

How to Cook Manure during Winter.

"Uncle John," of Wisconsin, writes on this subject: Ordinary farm-yard manure, to be immediately available as food for plants, needs cooking. The vegetable matter requires to be reduced, to set free its inorganic constituents, convert azotized substances into ammonia, and so on. This, according to my experience, can be best done in winter, using snow for fuel. Many are of opinion that manure will not ferment if the temperature of the air is below 40°; possibly fermentation may not commence below that temperature, but if manure is in an active state of fermentation previously to the temperature of the air being reduced below 40°, then the fermentation may be maintained if the temperature should go 40° below zero. On the 24th of last month (December) the thermometer at daybreak indicated 35° below zero, on the five preceding mornings the temperature was below zero, and on the 21st and 23d it was about 18° below at noon, with a strong west wind blowing; yet my manure is fermenting. Another error relating to this matter was set on foot by the New York Farmers' Club last winter. It was started by a member, and not contradicted, that the temperature of fermenting manure never exceeds 60°. The heat of our blood in health is near 100°, and any one who had loaded manure when fermenting, and felt the warmth of it through his boots, one might suppose would

have had doubts as to the accuracy of the statement. A neighbor had in his youth been undergroom to a gentleman. He told me how they caught shy horses at pasture. They beat up several eggs with sugar and a little flour; this they poured into a porter or wine bottle, corked it up, then put the bottle into the fermenting manure, and their horse-cake was there cooked.

When making up my hot-bed last spring, I found the temperature of the manure to be 162°. It had been handled in the orthodox fashion, watered and turned over twice at least previous to making the bed. The way I manage my manure, then, during winter, is this: Before cold weather sets in I have a heap of it fermenting. As soon as snow falls, the manure heap is built up squarely, as if I were building a hay-stack, and is kept covered with a blanket of snow while the snow lasts, which hereaway is sometimes nearly all through winter. [In the South where there is little snow, if the "blanket" of the manure heap is made of muck it will answer the same purpose as the snow.—*Ed. F. & H.*] The advantages to be derived from this method must be obvious, I think. The snow shields the manure from the cold outside; the warm steam rising within gradually melts the snow, which trickles, warmed, into the manure. This adds fuel to the fire. Moisture is essential to perfect fermentation. By fermentation heat is generated. If fermentation has commenced, and the moisture present be deficient, as often happens in summer, fermentation is arrested and the manure, instead of being reduced to a rich, juicy, unctuous mass, becomes dry and dusty, fire-fanged, and, in winter, remains until spring as raw as it came from the stable. One advantage of this method I consider to be the saving of that precious product of fermenting manure—ammonia.

The volatile carbonate of ammonia, instead of passing off into the air with the hot steam, on reaching the snow is condensed and carried back into the manure, and if, when the snow is going, a supply of marsh-muck has been stored up handy, so as to cover the manure heap a foot thick, the ammonia may be retained. Before I got up here outside the world, two German chemists had concluded that the exhaustive effect of small grain on soils, as compared with most other crops, was owing to their being wasters of ammonia; that besides the nitrogen required to form the gluten of the grain, the silica of their straw was absorbed mainly as silicate of ammonia which was decomposed by the plant, the silica being retained, the ammonia passing off into the air. Whether their conclusion has been verified by others, I do not know; but however this may be, we know ammonia is needed to produce all muscle-forming products of plants, that it does not exist naturally, in any considerable quantity, in soils, and that it is the most costly of all kinds of plant food, if specially applied; therefore a method of managing barn-yard manure which will retain its ammonia, and at the same time reduce it to a condition so as to be immediately available as food for plants, should be useful.

Scientific Department.

Chemistry in Farming.

The following article, from the *Journal of Chemistry*, contains information which every farmer should possess.

The soil is that upon which the farmer spends his labor. The atmosphere and the weather he cannot control, although, by close observation, he may forecast it.

No plant will flourish and mature unless its roots are situated in a soil containing all the mineral elements found in the ashes of the plant. The soil is the home of the plant—its birthplace and station, where it runs through all the different stages of its development, and whence it receives its nutriment.

The fertility of the soil depends upon its fineness of particles; since the food of a plant must enter it in a state of solution. That is, the mineral matters must be dissolved in water, and the rapidity of their solution is in direct proportion to the extent of their surface exposed. Hence, the finer the particles of earth, the more abundantly will the plant be supplied with the necessary elements.

The soil has the power of absorbing moisture from the atmosphere, and condensing the same in its pores, and the absorption of water vapors determines its capacity for absorbing other vapors and gases.

The part which capillarity of the soil plays is somewhat analogous to that of a lamp—the soil is the lamp and the wick, and the water is the oil.

By the action of the sun and the wind the surface is rendered dry by evaporation, and as fast as the particles of water escape in vapor, their places are supplied in capillarity from the stores of moisture below; the ascending water brings along with it the soluble mineral matter of the soil, and thus the roots of the plants are situated in a stream of their appropriate food, and those particles of material not taken up in the tissues of the plant are brought to the surface to be washed down by succeeding rains. With a deep subsoil and good drainage, capillarity aids gravitation, and the minerals brought to the surface then have a downward distribution.

It is easy to see, in a good soil well tilled, how capillarity thus acts, keeping the roots of the plant constantly immersed in a stream of mineral solution that is now ascending, now descending, but never at rest, and how the food of the plant is thus made to circulate around the organs fitted for absorbing it.

The same causes that maintain this perpetual supply of water to the plant are also efficacious in constantly preparing new supplies. The materials of the soil are constantly undergoing chemical changes whereby the silica, lime, phosphorus, potash, &c., become soluble in water and accessible to the plant.

Water charged with carbonic acid and the oxygen is the chief source in the chemical

changes. The more extensive and rapid circulation of water in the soil, the more mineral matter will be rendered soluble in a given time, and other things being equal, the less will the soil be dependent on manures to keep up its fertility.

Return to the soil, in the shape of manures, compensation for the precious minerals taken off with the soil. Plow deep, pulverize the soil well, and with thorough drainage you can depend on grains to sell; and your farms will improve in productiveness—bearing in mind that different crops draw differently upon the mineral resources, and that the rotation of crops has a tendency to fertilize the soil; for instance, clover with its long roots brings to the surface the rare minerals and matures a fine crop where wheat fails to produce, and in addition to that there will be a residue of minerals rendered available through the chemical action of the clover sufficient to maintain a good yield of wheat or corn.

The Chemistry of Soap-Making.

At first thought, it might seem that such a common operation, in the round of household duties, as soap-making, had little of scientific interest.

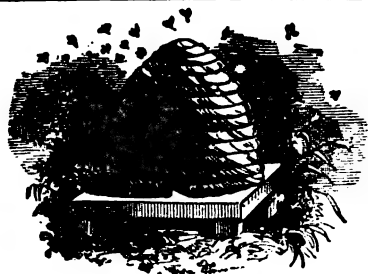
Contrariwise, however, it is purely a chemical operation, and soap either hard or soft, is as much a definite chemical compound as sulphate of iron. The housewife saves up lard and tallow wastes, and by and by, usually at spring and fall, the soap is made. These kinds of fat are considered fixed oils, because they do not evaporate at ordinary temperatures. They are composed of margaric, stearic, and oleic oils, united with glycerine. Glycerine then is the base or alkali that we displace by presenting to the above named acids the stronger base, potassa, for which also the acids have a stronger affinity than for the glycerine.

The lye from the leach holds in solution carbonate of potassa, and in this saponification process the carbonic acid is set free or displaced by the stronger acids of the fats. This is the chemistry of the operation in brief, and if we can make a practical application of it, it will be well.

When the soap does not "come," there is usually, contrary to what people imagine, an excess of alkali. An easy way of testing is to taste of it. If it be alkaline, add grease and boil till the alkalinity disappears. It is easy to know if it be too greasy, by setting a cupful away and cool, when the fat will separate and be at the top.—*Exchange*.

IN-GROWING NAILS.—Some people are much troubled with the edges of the nail of a toe cutting into the flesh. The cause is pressure on the nail, which is strong and round, so that the edges are driven directly downward. Take a bit of broken window glass, and scrape the arch of the nail till it is so thin and weak that it cannot resist the pressure, and, as a natural consequence, it will flatten and become wider.

The Apiary.



Mr. L. C. Waite, of St. Louis, formerly a contributor to the *FARM AND HOME*, publishes the following in the *Illustrated Journal of Agriculture*, in reply to the queries of a correspondent. These questions are substantially the same as those we frequently receive, and we answer them in the best manner by giving the desired information from the pen of an accomplished bee-culturist for whom we can vouch:

To the first question, "What do I think of the feasibility of bee culture on an extended scale, near this city?" I would say that, if pasturage is provided especially for the bees, the business would be very profitable. Apiaries of one hundred hives should be at least one mile from each other to make it pay.

The last two seasons, in this vicinity, were very poor; the bees hardly gathered enough stores for their own use, let alone surplus for their keepers.

In good seasons bees gather enormous quantities of honey, and when the extractor is used in emptying the honey from the combs and returned to the bees for refilling, from five to eight pounds per day can be taken from each hive for a month without intermission.

During the last twelve seasons only two in this locality were unfavorable for bee-keeping.

To your second question, "Have Italian bees been tried to any extent?" I answer in the affirmative. I have kept them since 1867, and am positive that they are superior in many respects to the native or common black bee.

I have not the time, at this writing, to give the points of superiority which they possess over the black bee, but as all who have kept them seem agreed that they are better, perhaps there is no use in giving them.

Your third and last question, "What is the best bee pasturage in this vicinity?" is a very important one to all bee-keepers. The following are the best honey-producing trees and plants that I can now call to mind, for this locality: Willow, elm, apple, maple, apricot, cherry, pear, honey-locust, linden or basswood, and persimmon trees; dandelion, kale, turnip, white clover, currants, raspberry, catnips, sunflower, *aster Ericoides*, buckwheat, Canada thistle and golden rod.

White clover grows abundantly near this city, and I thought could always be relied upon to secrete an abundance of honey; but last season, for the first time in my knowledge, it has failed to secrete a single drop. I have seen but few linden trees, but am told that there are plenty of them.

If I was going into the bee business on an extensive scale, I would purchase common black bees of from three to five dollars a stand, transfer them into plain, movable comb hives that would cost no more than one dollar and a half each, and buy a dozen or two stands of Italians to cross with the natives. I would start two or three apiaries, of one hundred hives each, within a mile of each other, and would want two or three acres of ground for each apiary. Then I would plant linden, honey-locust, and bee-willow trees for the future, and each year, at the proper time, put in kale, dandelion, alsike clover, partridge pea, turnip, buckwheat, catnip, aster and golden rod. Then I could roll up my sleeves and go to work and produce honey by the barrel full, and make money enough the first season to pay for the bees and hives. I could afford to sell extracted honey at ten cents per pound, and make it pay. Of course I would have some box honey put up for "greenhorns," to buy. As ten pounds of extracted honey can be obtained to one in the comb, and as the extracted honey is much better and healthier than that in the comb, for eating, it would pay better to obtain it in that way.

Perfection in Bee Culture.

There is no owner of half a dozen colonies of bees that has not had the opportunity to notice that frequently there will be a single colony that will far excel in yield of honey any of the others. They may be all in hives as near alike in size and construction as possible; they may be all managed as near alike as the bee-keeper knows how; yet one will distinguish itself by heaping up unheard-of-before quantities of honey.

Such a result must have a cause, or perhaps a number of coincident causes. To ascertain these causes is the province of scientific apiculturists.

The fact that an apiary of one hundred colonies produces an average of one hundred pounds of honey is of little value, and teaches nothing unless we are informed of how it was managed. That one tenth of the hives produced only an average of ten pounds each, and another tenth produced an average of two hundred pounds each, should lead us to try and answer the question: "Why do not all produce the maximum?"

We have instances reported where five hundred and even seven hundred pounds of honey have been secured from a single colony. What it is possible for one colony to do is possible for all; and until the bee-keeper shall be able to so understand and control the operations of his bees, that he can bring them all up to the highest standard of productiveness, the science of bee-culture will be imperfect. D. L. A.



The Stock Yard.

Best Breed of Cattle.

COL. COLMAN—Having been raised in the city, and father having but recently gone to farming, I am anxious to know which is the best breed of cattle for us to raise. If you will tell me through your paper, you will oblige a
BOY FARMER.

REPLY.—Your question is not sufficiently specific for us to answer satisfactorily. If you had told us for what purpose you wished to raise cattle, we could have replied. We can, in a general way, state that if your object is to raise cattle for beef, then the Shorthorns are preferable. They attain large size, take on flesh readily, mature early, and make most excellent beef. They need good feed and good attention, and will reward one for bestowing it. No other breed equals this for beef purposes. On account of their tendency to take on fat so readily, they are not generally good milkers—though there are exceptions to this. Some strains of Shorthorns are said to be fine milkers.

If the object is to obtain quantity of milk to sell by the gallon or to make cheese, the Ayrshire is the breed you want. Their milk is not as rich as some breeds produce.

If the best butter cow is wanted, the little Jersey stands at the head of the class. What she lacks in quantity she more than makes up in quality. Nearly one-fourth of her milk frequently is pure cream. The butter is golden yellow, of the highest flavor, and commands the highest price. Their disposition is quiet, and they are naturally pets.

For working cattle, the Devons head the list. They are a very hardy race, give rich milk and make nice beef. For hilly countries and scant herbage, no breed surpasses this.

If the object is to make money by breeding *per se*, select any good breed, obtain the very best breeding animals of that breed, give them the best care and attention, and try to get ahead of everybody else in raising them, and your success will be certain. It always pays best to raise first-class stock. Every breeder should strive to not be surpassed in his line. He must see to the care of his stock himself, and not trust to others, for they will neglect many things that are very essential to the highest success.—*Rural Home.*

The Cow-House.

Strict attention should be paid to all parts of the cow-house; sound feed, cleanliness in the stalls, punctual feeding, likewise place the cows according to their temper, not two evil-disposed animals together, also as the one or the other loves a warmer or cooler spot. The cow-house should be airy, but not exposed to draft. The strewing of straw should be well attended to, the more the better for the cows, particularly in winter, when cold. The stalls must be cleaned three times a week, and the feeding floors or troughs swept twice a day. In fact, everything in the cow-house should be calculated to make the animal feel comfortable in it.

Perfect cleanliness throughout the cow-house, to keep out the stench, should be the rule, else the milk will suffer from it, even during the milking. And here I would call attention to an unpardonable neglect so often met with in cow-houses. I mean the perfect disregard of the valuable manuring fluid which is produced in cow-houses and from dung-hills, and which so often is left to run into a ditch or creek near by, instead of being caught in some vat or vessel and used as a most valuable manure. Yet every farmer knows that without manure worn land cannot be cultivated. One must have seen European farms, where they cannot afford to waste anything, to make this great error in some American farms right glaring.

Currying cows as an act of cleanliness I would recommend, and the daily washing of the udder must be attended to by all means. All this has considerable influence on the health of the cow, as well as on her productiveness of milk.

It now and then happens that a cow, heretofore good, suddenly shows a decrease in her milk. This never should be a reason for neglecting her; on the contrary, she should have a very comfortable, clean, airy, but warm place, and the best of feed. She will soon recover, provided an actual disease has not set in. In the tending of calves in the cow-house, special regard should be paid to those which show the marks of future great milk productiveness, and as such are intended to be added to the stock of the dairy-farm.

C. F. RADDATZ.

French agriculturists are trying to acclimate sheep from Algeria which "give almost as much milk as goats, produce as much wool as Merinos, and furnish as good meat as any."

Over-Reaching in Horses.

EDITORS COUNTRY GENTLEMAN—Youatt, the best English authority (and all American writers on the horse copy after him without taking the trouble to think for themselves—in many cases they are all in a rut, like many of the self-constituted teachers in politics, religion and *materia medica* of the present day), says: "This unpleasant noise, known also by the terms 'clicking,' 'over-reach,' &c., arises from the toe of the hind foot knocking against the shoe of the fore foot. In a trot, one fore leg and the opposite hind leg are first lifted from the ground and moved forward, the other fore leg and the opposite hind leg remaining fixed; but to keep the center of gravity within the base, and as the stride or space passed over by these legs is often greater than the distance between the fore and hind feet, it is necessary that the fore feet should be moved alternately out of the way of the hind feet to descend."

Neither Youatt nor any modern writer, so far as I have seen, offers suggestions to get the fore feet out of the way of the hind feet. Youatt, not knowing what else to say, suggests the following: "Nothing can be done except to keep the toe of the hind foot as short and as round as it can safely be."

If a mechanic of ordinary skill should find that any part of the machinery of which he was in charge moved too slowly for that which was to follow, he would at once set his wits at work to get the former to move out of the way of the latter. Now let any novice clap his flat hand on the table and move his fore-arm in imitation of the movement of a horse's fore foot, and then double up his fist and perform the same motion, and he will readily see how much quicker a horse can get his fore foot out of the way of the hind foot with a short hoof than a longer foot and toe-calk.

Let the smith shoe your horse behind as usual; no clipping, rasping or shortening beyond what is usual; but to prevent clicking, cut off the toe or crust of the shell of the hoofs on the fore feet, placing the heel-calks in their proper places, and you will have no clicking.

RED HOOK, N. Y.

E. J. Mc.

How to Fit Collars to Horses' Shoulders.

It is very important to have a collar fit closely and snugly to the shoulders of the horse. It enables him to work with a great deal more ease and to apply a great deal more strength. It prevents galling and wounding, as the friction is avoided. Collars are so made, or should be so made, as to throw the chief force on the lower part of the shoulder. The horse can apply but little strength on the upper part, and for this reason breast collars are coming greatly into vogue, as the strength is exerted on the lower part of the shoulder. But we started out to tell our readers how to make a new collar fit the shoulders of the horse. The collar should be purchased of the proper size; just before putting it on the first time immerse it in water, letting it remain about a

minute, and immediately put it on the horse, being careful to have the hames so adjusted at the top and bottom as to fit the shoulder, and then put the horse to work. The collar, by being wet, will adapt itself to the shoulder, and should dry on the horse. When taken off, it should be left in the shape it occupied on the horse, and ever after you will have a snug-fitting collar and no wounds.—*Live Stock Journal*.

Cure for Colic.

To cure colic in the ordinary medical way, you can prepare a good "colic drench" thus: Take tincture of opium, one ounce; sulphuric ether, half an ounce; mix with a pint of tepid water. If necessary, repeat in half an hour. A much better way to relieve the horse, is the application of a fomenting bandage to the abdomen. In winter wet a woolen blanket in hot water, wring it slightly, and apply to the abdomen, bring the ends up over the back and fasten. If the weather be very cold, put a dry blanket over this to keep it from cooling too fast. In the summer apply a blanket wet in cool water. This fomenting blanket will relieve the horse in a few minutes, by determining internal heat to the surface. We have found, in summer, almost instant relief to the horse from lying down in the water.—*Stock Journal*.

The Merits of the Improved Breeds of Sheep.

The Cotswolds appear to have the preference of by far the larger portion of the mutton producers, on account of size, hardiness, weight of fleece and weight of fiber. For the production of early lambs upon native or grade stock, the Southdown is the preference of three-fourths of the breeders, although the Cotswold is liked by many. The Leicester—the basis of English improvements, to which nearly all her improved breeds owe an infusion of their best blood—is too highly bred to escape deterioration under our careless practices. The Lincoln, as modified by the breeding of the last few years, is a magnificent animal, producing a lustrous combing wool of great length; and it is hoped the breed may gain a firm foothold upon certain districts characterized by succulent and abundant pasturage and large yields of roots and grains. Much of the mutton stock of the country is so mixed and degenerate that an expert would be puzzled to tell what breed is predominant, and the opinions of the sheep farmers as to the comparative merits of different breeds are consequently confused and erroneous. It is greatly to be desired that the efforts of honest and reliable importers and breeders of really fine animals should receive encouragement, that a better acquaintance with the best types of the breeds may become general, and a more complete test of their comparative merits for different locations may be generally enjoyed.—*I. L. Hayes, in Rep. Dep. of Agriculture*.

The Poultry Yard.

Management of Poultry.

Poultry do best with a wide range. Warren Leland, I think, has proved that thoroughly. Hens, like crows and many other birds, will eat a great variety of food. They will live either on grain, or flesh, or insects exclusively, but when they can mix all these varieties of food to suit themselves, they do better—hence a wide range is best. Turkeys, especially, can be raised at little expense if they have the stubble-fields and the insects of a farm to feed on. The eggs bought at the grocers in the cities in the winter are eggs in shape and color—they can even be made to stand on the little end—but they are very indifferent food. You may give five or six shillings a dozen; half of them will be spoilt, so as to go pop when you crack the shell at the breakfast-table; the other half will be stale—not one fresh egg in the lot. Then we quit buying. Such was my experience. Then a woman came round with eggs to sell, and they were fresh, but the taste and smell were very naughty. I called to see her establishment, and found a great many hens in small quarters—feeding on dead horses. Then buying eggs came to a stop altogether. Now I keep poultry. At present I have twenty hens and a rooster. They have the run of a garden of about one-seventh of an acre—penned up only when the early tomatoes or grapes are ripening, or for a few days after planting corn, or peas and some other seeds. Before keeping poultry I was troubled with cut-worms, wire-worms, slugs on strawberry plants, &c. Now these are all gone. Often the early planted corn and plants from green-houses set in flower borders would look sickly and did not grow, and when the roots were carefully examined, plant-lice would be found. Hens and chickens scratch about the roots of such plants, and if not scratched too much they will grow rapidly afterward. I do not throw stones or call the dog at such times. On the contrary, I am thankful that the foot of a hen is so wonderfully adapted to the scratching process, and that she has the knowledge where to scratch to the most advantage both for herself and me. The droppings of poultry are excellent for a garden, and mine has been made greatly more productive, both in fruit and vegetables, since it has been the resort of poultry. My twenty-one fowl, during this winter, have eaten six quarts of corn, three of buckwheat, and three of wheat, or twelve quarts of grain a week besides the scraps from the kitchen. They have these three kinds of grain before them all the time, and help themselves; and this shows they will eat double the corn of either the other grain. In accounts kept for three years past I have found that each hen will eat about one bushel of grain, and average about 130 eggs a year. To be sure of eggs every day in the winter, it is best to have young stock, say hatched in March and April, and well kept. Chickens hatched in February will supply eggs in October and No-

vember, or when the old ones have not yet recovered from the effects of molting. In Summer, my hens roost under boards to protect them from rains; in colder weather they have warm stables, with windows glazed. The best perch for poultry to roost upon is a ladder. When vermin collect on this, I pass it through and through the flames of a burning brush-heap, but if the building becomes infested with these vermin, it must be fumigated with the fumes of sulphur. These vermin are found in the daytime in the cracks and crevices of the perches; at night they feed upon the hens, like other parasites, living at the cost of their victims. These vermin must be subdued, or all the pleasure of keeping poultry is at an end. Hens will dust themselves very often if they can. During this long winter of snow, it is one of the amusements of mine. The stable-floor is covered with several inches of earth, and that part where the sun shines upon it is now all dust, and there a dozen hens will be at a time apparently enjoying themselves as much as boys enjoy themselves in water. Egg shells are lime, and when hens are laying they are as anxious for lime in some form as they are for grain when hungry. Broken oyster-shells or burnt bones satisfy them. To those who keep hens exclusively for eggs, probably the White Leghorn will be found the best breed, as they have so little of setting propensity.—L. P. Trimble, in *American Farmers' Club*.

Pure-Bred vs. Cross-Bred Fowls.

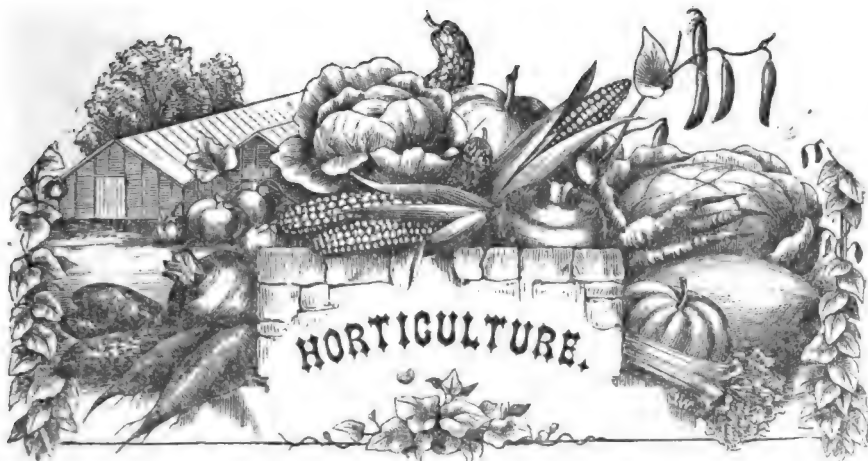
Whether the stock should be pure or cross-bred depends altogether upon the purpose of the poulterer; for the breeder, who raises poultry for flesh, will make a different selection from that of the one who farms for eggs.

In the latter case, he will choose a pure breed, since it is only among them that we find non-sitters. It is a curious fact that even two non-sitting breeds, when crossed, produce broods consisting for the most part of sitters; non-sitters are also the best breeds for producing eggs.

In the former case, he will endeavor to cross, for not only will he raise a larger proportion of the chickens hatched, but these, when grown up, are the most valuable for the table; moreover, they are of rapid growth. It is best, however, to limit the cross to the first generation, since fowls bred from the hybrid stock are of very varying size, shape and qualities.

As it is accordingly necessary for the poulterer to resort continually to pure breeds, in order both to obtain layers and to recruit his stock for the market, the fancier and the ordinary farmer can work together with mutual benefit.

CURE FOR CHICKEN CHOLERA.—Two oz. alum, two oz. resin, two oz. copperas, two oz. lac sulphur, two oz. cayenne pepper; pulverize, then mix three table-spoonfuls of the powder with one quart corn meal, and dampen for use. This quantity is sufficient for twelve fowls, and may be used either as a preventive or cure. For the first it should be given once or twice a week.



The Vegetable Garden.

We take for granted that the soil has been well prepared—spaded and manured—and that all are ready now for the garden line, the hoe and the box of seeds. This is the time to sow all the seeds for the main crop—beets, spinach, lettuce, radishes, peas, parsnips, carrots, cabbage, salsify, leeks and mustard—and later in the month, snap beans, melons, cucumbers, okra and squashes. Work over the asparagus bed, forking in lightly well-rotted stable manure, but taking care not to wound the buds which are just beginning to start.

Transplant early cabbages from the hot-bed to the open ground, and make the first planting of sweet corn for roasting ears, repeating the operation every fourteen days for a succession.

Sow plenty of tomato seed in a hot-bed, so that when the ground is warm enough there will be plenty of healthy plants to remove. The fruiting of tomatoes is greatly increased by the early maturity of the plants. The same advice is good for peppers and egg-plants.

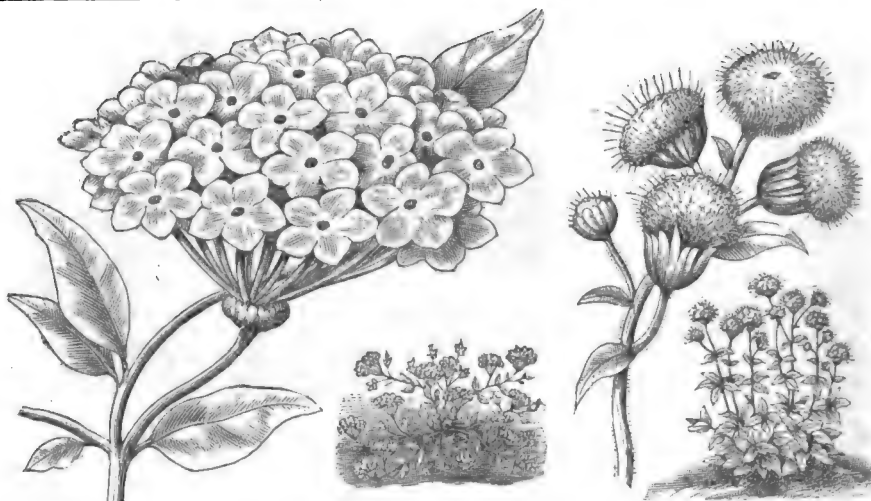
This is a good season to sow asparagus seed to raise plants for a new bed. We wish not only that every planter should have a vegetable garden on his plantation, but that in every garden there shall be an asparagus bed. Soak beet, parsley and onion seed for forty-eight hours before planting. Soaked seed germinates much more rapidly than that which has not been soaked. Sow plenty of celery. There is no more wholesome or palatable vegetable, and with a little trouble it may be raised in great perfection in our climate.

It is still time to plant Irish potatoes. For the late crop we have a very high opinion of the old "Peachblow."

Look out for cold nights and chilly mornings, which so often destroy bud, fruit and flower during this fickle month. Make arrangements on such nights to cover the tender plants. A few boards, a little straw, and some pieces of bark are enough to afford complete protection against the frost. This involves a little trouble, but what enjoyment worth having is not realized through toil and trouble? Let none of our readers pooh-pooh these directions for garden work and say that he has no time "to fool with a truck patch" when he has "to put in his corn and bed up his cotton land." We have heard this said so often the sound is quite familiar, but we do not want our readers, who ought to know better, to entertain such unenlightened and improvident sentiments. We tell you all that there is no spot of ground on any plantation which pays as well as the garden, and the better it is worked and attended the more it pays. See list of vegetables in our February number.

The Flower Garden.

The hyacinth, the jonquil, the tulip and the narcissus, those lovely harbingers of spring, are beginning to pass away, and the later flowers are beginning to awake from their winter's sleep and greet us with their smiles. Now is the time, ladies, if you would have a flower garden to delight you and your friends during the summer, to do the work which will secure you that pleasure. Sow the hundreds of annuals and biennials (we append a list for



ABROVIA UMBELLATA.

the use of those who have not access to the seed catalogues); plant out dahlias, peonias, tube roses, gladiolus, and the other late bulbs; make new beds of that loveliest of flowers, the verberna, whose many colors of tastefully grouped blossoms produce a beautiful effect. Continue to plant out rose cuttings. Avoid the use of too stimulating manures for flowers. Woodsear is the best.

In sowing flower seeds, most of which are very small, take care to cover them very lightly and with the most finely-pulverized soil. Two-thirds of the failures of amateur floriculturists are attributable to careless sowing of the seed, covering too deep, and with coarse, lumpy soil. The best way is to sow the seed on a finely-raked surface and cover them as lightly as possible by sifting fine earth over them through a sieve. If the seeds be sown in dry weather, it is well to water them through the fine rose of a watering pot to hasten their germination. Let it be remembered throughout all the coming flower season that an abundant supply of water is essential to success in the flower garden.

Scrape, rake and clean the walks. Dress the borders, and make everything within the inclosure devoted to Flora bear testimony to the taste, skill and neatness of the fair ladies whose peculiar domain it is.

Flower Seeds.

For the convenience of our readers we publish the following list of choice flower seeds, from which they can select for themselves:

Hardy Annuals.—Adonis, Ageratum, Agrostemma, Alyssum, Argemone, Asperula, Calen-

dala, (Marigold) Calliopsis, Callirhoe, Candytuft, Celosia Centaureidum, Chlora, Clarkia, Convolvulus, Crepis, Delphinium, (Larkspur) Escholtzia, Eutoca, Gilia, Helianthus, Chinese Hollyhock, Kaulfusia, Lupine, Mignonette, Nemophila, Nigella, Nolano, Oxyura, Petunia, Poppy, Portulaca, Double Zinnia. Of nearly all of the above there are several varieties which bear flowers of different colors.

Half Hardy Annuals.—Amaranthus, Aster, (25 varieties) Balsam, Bartonina, Browallia, Cactalia, Cleome, Gaillardia, Hibiscus, Linum, Malope, Marigold, Martynia, Mirabilis, Mesembryanthemum, Enothera, Obeliscaria, Phlox, (several varieties) Salpiglossia, Salvia, Scabiosa, Schizanthus, Sensitive Plant, Stocks, Tropaeolum, Verbena.

Perennials.—Antirrhinum (Snapdragon) Perennial Larkspur, Carnations, Pinks, Lobelia, Lychnis, Myosotis, Pansy, Sweet William, Wallflower.

As this is the time to plant dahlias, we give below the names and description of some of the finest varieties, which can be bought from any reliable seedsman at from \$2 to \$3 per dozen:

The "Amazon," yellow with scarlet edge; "Andrew Dodds," very dark maroon; "Ardens," brilliant scarlet; "Bird of Passage," white with pink edge; "Colossus," pale yellow; "Flamingo," bright scarlet; "Lady of the Lake," black with purple edge; "Goldfinger," deep yellow; "Hamlet," red; "Pearl," white; "Purple Acme," purple; and "Lady Jane Ellis," cream white, tipped with rose.

The Orchard.

Dress round the roots of the trees with a mixture of leaf-mold and ashes, using the spade-fork, not the spade. Prune the straggling limbs of the peach trees. This not only

improves the vigor and appearance of the tree, but in those parts of the South where spring frosts often destroy the fruit crop, retards the blossoming, and by the time the fruit is formed all danger of frost is passed. Remove all decayed branches, keep up the hunt after the borer and other destructive worms. Where it is possible, mulch the fruit trees so as to thoroughly shade the ground round the roots. It will much improve the size and quality of the fruit. The blighting effects of spring frosts in the orchard may be guarded against by building piles of bark, damp pine straw and other material which will burn slowly and emit a great deal of smoke with as little flame as possible, and when the cold night comes to set fire to them. The trees are soon enveloped in smoke which settles over them and shields the young fruit effectually. The greatest danger from frost at this season is just before dawn. It requires some nerve on such a night to get up and set fire to the heaps above described. But if done at all let it be well done, and to do it well the work must not be left to the "hired man." We knew a fruit grower in northern Georgia, who adopted this precaution every year, and when the orchards of all his neighbors were blighted and fruitless, he had an abundance of fruit.

HOW TO PROTECT FRUIT TREES AGAINST RABBITS.—A friend in north Mississippi who has a fine orchard of choice trees, and pays great attention to his fruit, told us recently of a simple and effectual way to protect fruit trees from being gnawed by rabbits. It is to rub the stems as high as the rabbits can reach with a piece of bacon rind. This is so much simpler and less troublesome than any of the recipes we had previously heard, we noted it for the benefit of our readers, and particularly for that of our friend R. J. N., who related in the February number his sad experience with the use of tar on his trees, as a protection against rabbits.

Practical Lessons on Apple Orchard Culture.

PREPARATION OF THE SOIL.

The soil being properly selected, we will offer a few suggestions on the preparation of the same, describing in the meantime, or in connection therewith, a process by which enormous crops of corn, etc., may be realized, all of which has been tested by actual experiment.

Enrich the soil or ground (greensward) for the proposed orchard, with a thorough applica-

tion of barnyard manure, from forty to sixty loads per acre, composting with muck wherever convenient, as this latter will materially aid in the formation of the roots of the young trees. Plow shallow and with care. Plant to corn, applying to every three hills a handful of a preparation composed of four parts ashes, two of plaster, one of lime and one of salt. Cultivate thoroughly at least four times during the season, using the hoe but little, except to cut down what grass or weeds that may appear. Eighty bushels of shelled corn per acre was the result of this experiment. The succeeding spring, plow from eight to twelve inches in depth, set out the trees and plant to corn or potatoes. Use the cultivator freely. The spring following, plow the usual depth. A second person should follow along, raising one end of the whiffletree with one hand and slightly bending over the trees with the other; by doing so, the bark will escape injury. Before dragging, draw off at least the larger stones. Sow to oats or wheat, and seed down with a mixture of four quarts of timothy and eight of large clover per acre. Sow no grain nor grass seed nearer than five feet to the trees. Drag and bush thoroughly, using as a finishing touch the garden rake wherever necessary. The roller should in no case be used. Give a liberal top-dressing of the preparation above described. Stir the soil about the trees four or five times during the season. Draw off the stones early in the spring, just after the disappearance of the snow, as this is the only time they can be readily found. A deep, dry, hard-wood soil, thoroughly tilled and enriched with at least ten of the primary elements, all essential to the successful formation of the trees. With such a selection and preparation of soil, and with proper training in the future, we may expect in three years to pluck the first fruits of our pomological labors, the while with two crops lodged down annually. Thus shall diligence receive its reward.—O. A. Pratt, in the *Journal of the Farm*.

Diseases and Insect Enemies of Fruits.

We find the following report of Mr. Thomas' fourth lecture, made by Prof. Prentiss, of the University, in the *Prairie Farmer*:

The lecturer first alluded to the immense havoc which insects were now committing, threatening to extirpate fruit culture, especially in the eastern portion of the country; but it seemed to him that the people were quite too enterprising to be baffled in their efforts to carry forward an industry of such great importance. The lecturer then enumerated the principal injurious insects, and proceeded to describe their habits, and the remedies to be used against their depredations. First, as to universal remedies, the most important being to secure healthful growth by good culture. Healthful plants are best able to withstand the effects of disease and depredations of insects. Growth must not be too feeble on the one hand, nor too succulent on the other; the happy mean of a good, strong growth, but well ripened and matured, must be aimed at. No general

rule of culture can be given; it must depend upon the soil and climate. On the poorer soils of New England and New York, it might be necessary to cultivate constantly and to manure abundantly, while on the richer soils of the West it might be necessary to keep orchards in grass, so as to repress a too vigorous growth.

The tent caterpillar is one of our most common insects. By far the best remedy is to go in the orchards in the fall or winter and destroy the nests, which are readily found encircling the branches; if the eggs should hatch in the spring, the insects may be easily destroyed by swabbing with thick lime wash. Perfect immunity from injury, so far as the tent caterpillar is concerned, is only a question of labor and attention, no skill being required.

The canker worm makes comparatively slow progress, but is, nevertheless, a formidable enemy. It is now common in New England and New York, and is progressing toward the West. As the female cannot fly, the remedy consists of preventing her from climbing up the trunks of the trees. The simplest remedy is a belt of cotton around the trunk, smeared with tar. This must be renewed as frequently as the tar becomes dry. Perhaps the best remedy is to place a square box around the base of the trunk and fill it nearly full of cinders, or ashes and soil. A flange is placed around the top of the box, which is filled with oil. The insects, in their efforts to climb the tree, fall into the oil and are destroyed.

The codling moth must be set down as the most formidable enemy of the apple. It attacks the fruit itself. This insect was introduced from England early in the present century, and has spread with great rapidity throughout the country. Even beyond the Mississippi it is only too well known. One of the best remedies is to keep swine in the orchard, which eat the infested apples as they fall, and thus destroy great numbers of the larvæ. Sheep, which are about as fond of boys of green apples, will perform an equally useful work. These remedies have proven successful in numerous instances. If sheep are employed, it may be necessary to protect the bark, as they sometimes girdle young trees. Another remedy is to surround the trunk with a hay rope. Many larvæ will seek this shelter when about to change to chrysalis, and may be destroyed.

The borer is sometimes very destructive, and great care and attention are demanded. Prevention must first be looked to. By smearing the trunks with soft soap, the beetles are prevented to a great extent from laying their eggs; but the young borers must be destroyed. A little care in observing will show where the young larva has entered the trunk, and a slight cut with a knife will speedily dispatch him. If well advanced, a wire must be thrust into the burrow of the borer. Many fine orchards have been destroyed by this insect; a little care and labor would have prevented such a result.

Aphides sometimes infest leaves to such an extent as to injure the orchard. Syringing with strong soap suds is the proper remedy. For

field mice, clean culture is an effectual remedy. Grass and weeds must be kept away from the bases of the trunks; and as an additional safeguard, mounds of soil may be piled up around the trunk in the autumn to be removed in the spring.

Early Tomato Plants—How to Grow.

As some person may be in the same fix the coming spring that I was last, as regards knowing how they are to grow a few early tomato plants, and have them stocky and first-class plants in every respect, I will give the details of how I managed to grow a few hundred to my entire satisfaction. I took a small box, 12 by 20, 6 inches deep, and filled it with good garden soil, and put it on the kitchen stove-drum, and let it stay there till the dirt was thoroughly warmed; then took a stick and made marks an inch apart, $4\frac{1}{2}$ inches deep in the dirt, crossways of the box; then scattered tomato-seeds quite thick along the rows, and covered them about one-fourth of an inch deep; then took a newspaper and wet it and covered the box, to prevent the dirt from getting dry on top. The box was set on a bench near the stove after the seeds were sown, and the following day set on the stove-drum again for the purpose of keeping up the heat of the soil, being careful not to let it get too hot.

In forty-eight hours from the time the seed was sown, they had sprouted, and many had broken the ground; a few were near one-half inch high. When the plants had attained to the height of two inches, I transplanted them into other boxes about one and a half inches apart each way. The plants were left in these boxes till they had attained the height of four inches, and then transplanted into a sort of hot-bed made as follows: A pit was dug in the side of a hill facing the southeast, 6 feet wide by 12 feet long, and posts driven in the ground at the corners, and one on each side 6 feet from either end. On these posts boards were nailed 2 feet high in front and $2\frac{1}{2}$ feet high at the back, giving six inches fall from back to front. In this frame I put fresh horse-manure, mixed with litter—such as is found at farmers' horse-stables—to the depth of twelve inches, pressing it down firmly as I put it in; then put on six inches of good soil and covered the bed with covers, made by stretching and nailing with ten-ounce tacks, common heavy brown muslin on light frames, three by six feet. These frames were made of white pine lath, sawed one by three inches, halved at the corners and nailed with clinch-nails. Common cut nails heated to near a white heat and allowed to cool very slowly, are just as good as the clinch-nails sold at the hardware stores, and are much cheaper.

After the covers were put on, a board was laid across the upper ends of them, reaching from one end of the hot-bed frame to the other; and also across the lower ends to prevent heavy winds from moving them. As soon as the soil in the bed was sufficiently warmed, I raked it down smooth and marked it in rows four and one-fourth inches apart, and set the

plants the same distance apart in the rows. Before removing the plants from the boxes, the soil was thoroughly wet, in order to cause as much soil as possible to stick to the roots. Then a case-knife was drawn through the soil, midway between the plants each way, about four inches deep; and in removing the plants, no difficulty was experienced in keeping the dirt about their roots. After being transplanted and the covers put on, no care whatever was given them, except an occasional watering. About the 20th of May, the plants were removed to the open ground, the same care being exercised as regarded watering and cutting between the rows, that had been when transplanted to the hot-bed. These plants were as fine as any I ever saw grown anywhere, except those grown in a green-house in pots. Tomato plants must have age in order to produce early tomatoes.—*Correspondent Rural New Yorker.*

Corn Fodder.

The opinion we have always held upon the question of the value of green corn fodder for milch cows has been, that when raised from broadcast sowing, it is nearly worthless, but when sown in hills or in drills, and cultivated with access of air and sunlight, it is of high value. During the present season we have made some experiments to test the correctness of these views. Stalks were collected from a field where the seed was sown broadcast, and also stalks growing in drills upon the same field, and they were dried in a drying closet to expel the moisture. Both specimens were planted at the same time (the 6th of May), and it was found that the plants from the broadcast sowing contained 92 per cent. of water, those from drills 83 per cent. of water. Thus it was shown that the difference of solid matter in the two was relatively as 8 to 17 per cent. The solid matter was composed of starch, gum, sugar, and woody fiber. There was almost an entire absence of sugar and gum in the stalks from the broadcast sowing, while the stalks that had grown under the influence of light and air held these nutrient principles in considerable quantities. The stalks were collected at the period of growth just before the ear begins to form, a period when most farmers commence to cut the fodder for their cows. Our experiments upon corn fodder have afforded us important information upon other points. We find that the stalks cut before they reach a certain stage of growth, are deficient in nutrient matter, and therefore it is a waste to feed them too early.

The corn plant, like all other vegetable structures, has but one object or aim in its growth, and that is to produce seed. It is engaged during its whole life in storing up large quantities of starch, which is to be used when the pressing occasion arrives, or the seed vessels mature, to form by some subtle mysterious changes, the rich nutrient principles which are found in seeds. As soon as this struggle is over, the corn plant, like all animals, dies a natural death. It is not necessary for frost to

strike it; it dies from simple exhaustion. The proper time to cut and feed corn stalks is during the four or five weeks which succeed inflorescence—or in other words, they should not be cut until the flower is fairly developed and the ear commences to form; and any corn that is so planted that the ear cannot form and mature, is *practically worthless as fodder.*

Farmers may learn from these facts, that corn designed to be cut for fodder should be planted at two or three periods during the season; some fields quite early, others somewhat later, and still others as late as it is safe. In this way, when the hot, dry months of July and August are reached, and the pastures falter, a supply of fodder is secured at a proper stage of growth to afford the largest amount of nutriment.—*Boston Journal of Chemistry.*

Household Department.

Domestic Receipts.

BAKED CORN MEAL PUDDING.—Take three pints of new milk and heat till it boils, then slowly stir in one pint of corn meal, remove from the fire, let it stand five minutes, then add a tablespoonful of butter, one pint good syrup, four eggs well beaten, half pound raisins, lastly, stir in one quart of hot new milk, and one pint sweet cream, also a little allspice and grated nutmeg, bake three hours, or till of a light brown and not milky. Eat with sweetened cream.

PUDDING SAUCE.—One tablespoonful of butter and one cup of white sugar beaten well together, then add one egg frothed, and a gill of new milk, make it in a bowl, set it over a teakettle of boiling water, stirring it constantly until heated through, then add one gill of wine and spice.

STRAWBERRY SHORT CAKE.—Make a nice light soda biscuit dough, roll thin enough, that when baked it will be about an inch in thickness, bake in a quick oven till a light brown, when done lay it on a platter, split it open, butter both halves, have ready your berries fresh picked and capped, with plenty of sugar and sweet cream, a sufficient quantity to cover the half biscuit on the platter, replace the other half and your biscuit is ready for the table.

PRESERVING STRAWBERRIES.—This delicious fruit is so acid that it is not easily canned with a small quantity of sugar as other fruits, it is impossible to preserve the fine color, and high flavor without adding half to three-quarters of a pound of sugar to a pound of fruit. They preserve their shape and color better if they are only partly cooked in the syrup, and then allowed to stand in the sun a few days, but if cooked entirely by the fire, they should be put into jars while hot, and sealed immediately. Keep in a cool place.

STRAWBERRY VINEGAR.—Take three or four quarts of strawberries, put them in a stone crock and cover them with vinegar, let them stand twenty-four hours, then strain this juice

through a jelly-bag, and pour this on more berries, letting this stand another day, repeat this process until you have the quantity you desire, add to each pint of juice one pound of sugar, put it into a porcelain preserving kettle and allow it to heat sufficiently to melt the sugar. When it is cold, put it into bottles. It will keep several years, a tablespoonful or two added to a tumbler of water in the heat of summer makes a cooling and refreshing beverage, also highly relished by the feverish invalid.

SPICED STRAWBERRIES.—Five pound strawberries, four pounds of sugar, two tablespoonsful of ground cloves, the same of mace; after cooking twenty minutes add one pint of good cider vinegar, and boil as preserves. Red currants, cherries, raspberries and peaches are all very nice put up in this manner.

STRAWBERRY WINE.—Press out the juice from the berries, and to each quart of the juice add one of water, add good white sugar at the rate of one pound to the gallon. Put into a demijohn or barrel, in a cool cellar, and ferment in the usual way.

TONGUE TOAST.—Take a nicely-prepared cold boiled tongue, mince it fine, mix it with a little sweet cream or new milk; if neither is to be had, use the beaten white of an egg, simmer the mixture, adding a little water, toast slices of stale light-bread, butter and lay them in a hot dish, cover each slice with the tongue mixture, and serve while hot, a nice breakfast dish.

Words Over Our Work.

OUR DAUGHTERS.

Time was when there did not seem to exist in the South any necessity for teaching our daughters how to work, and as a consequence we did not teach them. But there came a time when many felt sadly the effects of this neglect in their early education. Time is, now, when many of us, in easy circumstances, are beginning to fall back on the same old line, and I would not undertake to promise that a few years in the future may not bring on a renewal of regrets. We live in the midst of an unsettled epoch in the history of this country, and, consequently, no one can tell this day what the next day may bring forth.

This being clearly the case, it is best to take the safe side and teach our daughters how to work, especially we who live in the country. It is supposed to be that we are *now* all capable of teaching them, but if we are not, then we should employ a governess to teach them for us. Let them understand how to milk the cows, how to attend the poultry, the sheep, the bees—anything that a lady might look after about the plantation. And if they take a few lessons in the use of the garden rake, the hoe, the pruning shears, and even the sheep shears, I assure you it won't hurt them.

I have no objections whatever to delicate and pretty young ladies about the farm-house, but I would see them rosy and robust rather than slender and sallow. I do not object to

Greek and Latin, and music and song, but I think these could hardly be the worse from coming from a head that would not be left entirely empty when they were out. I can endure the delicate touch of tapered and pearly (bony) fingers upon the keys of a piano—that all does well enough when there is nothing better; but if you want to please me give me the notes that a well-developed hand and fingers (a little horny from contact with the rolling-pin and churn-dash) can knock forth in their fullness. That's real music in *my ear*, while to me the other is simply music portrayed in a very dim picture. Always give me the real in place of the ideal, and take my warmest thanks in return.

It is not in the least disgraceful for a young lady to understand how to work. If circumstances through all her life keep her above the necessity of bringing her knowledge into practical use, she will be none the worse for having had it where she could have drawn upon it instantly had occasion required. Besides it will be a gratification to her to understand all that is going on around her, and she *may* find it to her advantage to superintend portions of her household affairs every now and then.

The editor of this department of *The Register* has been talking loud and long about agriculture in common schools. I cheerfully endorse every word said on that subject, and would go still further by urging it upon our ruralists to have more agriculture in their homes, and especially among their daughters. Too many farmers' wives have a foolish notion in their heads that they are raising their daughters for professional husbands, or for great merchants, or for Governors, or for Presidents, or something of that sort; and, consequently, they endeavor to prepare them for the proposed new sphere, making themselves ridiculous by an effort to teach what they themselves know nothing of; thus wasting time that ought to be applied to the real advantage of the young person. If I were called upon to suggest a course of education for farmers' daughters, I would line it off as follows:

1st. A knowledge of the simplest things about the farm—things within the comprehension of very young minds.

2d. The mysteries of the poultry-yard and the pig-pen.

3rd. Lessons in the garden, with lessons in the child's primer—the names of the flowers and the names of the Roman letters.

4th. Lessons in the kitchen and in the second series of "school" books.

5th. Lessons in the dairy and in the more advanced series of "school" books.

6th. Lessons in the cow-yard and in books still more advanced.

7th. Lessons in general household affairs, and possibly lessons on the sewing machine.

8th. Music and drawing, and natural science.

9th. The languages and advanced courses of what the world calls learning, that is, if within means and deemed necessary.—*Mary C. West, in Mobile Register.*

The Southern Farm and Home.

MEMPHIS, TENN., MARCH, 1873.

WM. M. BROWNE, - Editor and Proprietor.
BOYLE & CHAPMAN, - - - Publishers.

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

PRACTICAL PROOF OF THE VALUE OF SOUTHERN FACTORIES.—We find in the Columbus (Ga.) papers, the annual report of Mr. Bussey, President of the Eagle and Phoenix Factory, in which he shows that the earnings of the factory were twenty-four per cent. on the capital stock, of which ten per cent. has been set apart as a dividend to stockholders. Mr. Bussey also announces that semi-annual dividends will be paid hereafter. The factory runs 21,000 spindles and 640 looms, consuming 4,300 bales of cotton, and 200,000 pounds of wool.

This factory, though burned to the ground by the Federal soldiers in 1865, is now one of the most complete and one of the best managed in the South. All its fabrics are of good quality, but we have especially admired the cotton blankets which it manufactures, which in softness and fine finish excel any we have ever seen.

THE WHEAT CROP.—All our accounts from the country agree in stating that the severe winter has done great injury to the growing wheat crop. It has been to a great extent "winter killed," especially on thin land. Where the land was well plowed and the seed drilled, we learn that the crop has not been so seriously injured. The same reports reach us from Great Britain. It is there expected that there will be a large falling off in the yield of wheat, and that England will be a heavy importer of bread supplies.

These facts should be well weighed by the Southern planters, and should influence them to guard against the possibility of being compelled to purchase "breadstuffs," by planting a heavy corn crop, and not thinking that a big cotton crop is the only thing to be desired.

We acknowledge with thanks the receipt of a copy of the Report of the Chief Signal Officer of the U. S. Army, Brig. Gen'l Albert J.

Myer. It is a very valuable work, containing a vast amount of useful information. The bureau which General Myer has founded and directs has already done good service. We all know with what remarkable accuracy the observations of "Probabilities" enable him to foretell the changes of the weather, and it is obvious how valuable this information is to all who are engaged in agriculture and commerce.

HON. W. P. PRICE, M. C., has our sincere thanks for several public documents which he sent us recently. We prize the documents for themselves, but still more as an evidence that our friend remembers us kindly, though we no longer bear the relation to each other of representative and constituent.

DEATH OF LUTHER TUCKER.—We regret to record the death of Luther Tucker, editor and part proprietor of the *Cultivator and Country Gentleman*, of Albany, N. Y., and, we believe, the oldest agricultural editor in the United States. Possessed of great ability, varied knowledge, sound judgment, and perfect honesty of purpose, he was very successful as a journalist and generally respected as a citizen. He was born at Brandon, Vt., in May, 1802, and was consequently nearly seventy years old at the date of his death, which took place on the 29th of January, 1873.

THE DOW LAW PLANTER.—We call attention to the advertisement of Miller & Brown, of Fort Valley, Ga., manufacturers of the Dow Law Cotton Planter. We have used this implement for three years in planting cotton and in distributing fertilizers, and can confidently recommend it as the best for both purposes we have ever seen, and we have tried several other "patent planters." It is simple of construction, easily understood and managed, made of durable material, and has the full merit of being a labor-saving machine in the true sense of the word. We recommend it strongly because we know its value.

THE DRIVEN WELLS.—We have received several letters within a recent period from subscribers and friends, asking for information about the "driven wells," which have been lately invented, and which are said to possess so many advantages over all other wells heretofore known. In order to answer these inquiries intelligently, we addressed ourselves to Messrs. Cowing & Co., the extensive pump

manufacturers of Seneca Falls, N. Y., who make and sell these driven wells and pumps, and have obtained from them the cut published at the beginning of this number, which gives a sectional view of these wells in operation, with the pumps attached. They are evidently very simple of construction, consisting of an iron tube, perforated with holes at its lower end and shod with a long steel point, which it is said is capable of penetrating the hardest soil. The tube is driven into the ground by blows upon its upper end, given by a wrought iron or steel sledge-hammer, and the driving is continued until it is ascertained, by means of a plumb lowered into the tube, that water has been reached. A "sand pump" is then attached, by which the sand, gravel and impure water are cleaned out, leaving the end of the tube in a little reservoir, formed by pumping out the sand, and composed of gravel and stones, where the water is perfectly pure. These driven wells are very cheap, easily constructed, and we should suppose, perfectly practicable, except in a rocky substratum. In alluvial lands, in prairies, indeed everywhere, with the exception of rocky land, these wells would succeed.

The point shod with steel and covered with wire gauze, and a brass or tin jacket to protect the gauze from injury as it is driven into the earth, costs about \$5. The sand-pump costs \$5 50, and the cost of the tubes depend upon the lengths required to reach water, the price per foot being not more than that of common gas-pipe. The cost of a driven well, including pumps, point and tubes, and mechanic's wages, need not exceed \$40 to \$50.

If all that is claimed for them by the inventors is true, they are certainly "a handy thing about a house."

THE PROCEEDINGS OF THE GEORGIA STATE AGRICULTURAL CONVENTION, have not reached us in time for notice in this number. We regret to learn that illness prevented our excellent friend, Hon. Sam Barnett, the Secretary of the State Agricultural Society, from being present.

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWNE, Memphis, Tenn.

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the FARM AND HOME and any of those papers at the subjoined reduced rates:

FARM AND HOME and *Weekly Memphis Appeal*, per annum.....\$3 50

FARM AND HOME and *Weekly Memphis Register*, per annum.....\$3 00

FARM AND HOME and *Weekly Arkansas Gazette*, per annum.....\$3 00

FARM AND HOME and *Columbus (Miss.) Democrat*.....\$3 00

In addition to these we can furnish the FARM AND HOME and any one of the following valuable periodicals at the following prices:

FARM AND HOME and *Southern Christian Advocate* (Macon, Ga.), per annum.....\$3 00

FARM AND HOME and *Southern Magazine*, per annum.....\$5 00

FARM AND HOME and *Harper's Magazine*, per annum.....\$5 00

FARM AND HOME and *Lippincott's Magazine*, per annum.....\$5 00

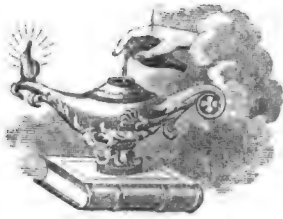
FARM AND HOME and *Appleton's Journal*, per annum.....\$5 00

FARM AND HOME and *Hearth and Home*, per annum.....\$3 50

W. S. BRUCE & Co's NEW BUILDING.—The well-known enterprise and energy of this justly esteemed firm, have been well illustrated in the beautiful new building for their carriage factory and warerooms, which they have erected on the site of their former building on Monroe street, which, it will be remembered, was destroyed by fire last September. This building, now nearly ready for the roof, will be completed in a short time, and will be a credit to the city both in the strength and solidity of the structure and in its architectural design. We sincerely condoled with our friends, the Bruces, when their property was destroyed, and we now as sincerely congratulate them on the speedy completion of the capacious and ornamental establishment which they have erected, and in which we wish them an abundant measure of success.

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

Literary Department.



EDITOR'S BOOK TABLE.

EXPRESSION OF THE EMOTIONS IN MAN AND ANIMALS. By Charles Darwin. (D. Appleton & Co.) pp. 374. All those with whom the theory of evolution and natural selection have found favor, will find this latest work of Mr. Darwin, a very interesting study; but those who refuse to believe that an "anthropomorphous ape" is our common progenitor will not find in it much to amuse or instruct them. Like every work of Darwin's, this shows great industry, deep research, wonderful patience, and skillful adaptation of facts to support a theory. But after all the book proves nothing. It presents some curious phenomena especially in the nature of the lower animals, but fails, we think, utterly to attain the object for which it was written, namely, the discovery of fixed laws governing the emotions and their external expression.

Mr. Darwin differs entirely from Sir Charles Bell, the author of "Anatomy and Philosophy of Expression," that man has been created with certain muscles specially adapted for the expression of his feelings." This would be totally inconsistent with the evolution theory, and establish man's creation as an independent order of being, therefore Darwin goes to work to show *modo suo* that our way of expressing our emotions is not independently innate, but is acquired or evolved, just as the present distinctive differences between man and a monkey are not differences *ab origine*, but the result of "development of species by natural selection."

The book is well illustrated by wood-cuts and photographs, and will no doubt be found full of interest to those who feel any interest in the subjects of which it treats, and the theories it is intended to establish.

THE OCEAN WORLD. By Louis Figuier. Revised by Dr. E. Perceval Wright. (D. Appleton & Co.) pp. 656. This is a highly interesting and instructive work, giving the reader what purports to be "A Description of the Sea and its Inhabitants." It is a new edition of Figuier's work, and to a large extent a new work, as the learned editor, who is professor of Botany in Trinity College, Dublin, being less dependent on his imagination for his facts, and more scrupulous in his statements than was Figuier, found himself compelled to re-write a number of chapters of the original work. When we remember that the surface of

the globe covered by the ocean is 23,814,121 square miles, or about seven-tenths of the whole, and think of the wonders this vast body of water, whose mean depth is 10,000 feet, contains, we are grateful to any one who gives us even a partial view of them. We read this book with deep interest; learned from it much that we did not know before, and heartily commend it to the perusal of others. The exuberance of Figuier's eloquence is skillfully toned down by the matter-of-fact hand of Dr. Wright, and the whole is written with that clearness, simplicity of language, and attractiveness of style, which are necessary to make a scientific subject popular to the unscientific reader. The illustrations and maps are numerous and well-executed.

JOURNALISM IN THE UNITED STATES FROM 1690 TO 1872. By Frederic Hudson. (Harper & Brothers,) 8vo. pp. The author of this work was for a number of years the manager of the New York *Herald*, and a large portion of the success of that paper is, it is well-known, due to his tact, ability and thorough knowledge of what is requisite to make a newspaper pay in the present day and generation. Mr. Hudson was well qualified for the work which he undertook, and on the whole has performed it well. It is not critically accurate in all its statements, nor is it free from political bias and prejudice. It contains some things that are incorrect, and omits facts which ought to have been mentioned. It is a well-compiled, but by no means faultless work—an unevenly executed sketch to be filled up and elevated to the dignity of history, by some future writer. Mr. Hudson divides American journalism into six epochs: 1. The First American Newspapers, 1690-1704; 2. The Colonial Press, 1704-1755; 3. The Revolutionary Press, 1755-1783; 4. The Political Party Press, the Religious Press, the Agricultural Press, the Sporting Press, the Commercial Press, 1783-1833; 5. The Transition Press, the Cheap Press, 1833-1835; 6. The Independent Press, the Telegraph Press, 1835-1872. The latter epoch was of course inaugurated by James Gordon Bennett, in the publication of the New York *Herald*, which Mr. Hudson says, with pardonable vanity, may be now regarded as "the history of journalism in the United States since 1835." His remark would have been strictly accurate had it been limited in its application to journalism in New York, and the peculiar ethics which distinguish the newspaper press of that great city. There are communities on the American Continent, where the means employed by Mr. Bennett to build the *Herald*, would not have resulted in the great success which attended them in New York. Mr. Hudson's book, is, however, well worth perusal, and contains within its covers, a large amount of entertaining anecdote, useful information, and historical incidents which may be made available "to point a moral or adorn a tale."

MIDDLEMARCH. A Study of Provincial Life, by George Eliot, 2 vols. (Harper & Brothers.) This is incomparably the best novel of the decade, the best that its gifted author ever wrote,

and when we remember that she wrote "The Mill on the Floss" and "Romola," we do not know how we can give Middlemarch higher praise. It is totally different from the sensational novel of the day. Those who enjoy the latter will not appreciate the former. The charming story so delicately and minutely unfolded, the admirable characterization so drawn "to the life," that we feel that "Dorothea," "Casaubon," "Vincey," "Mr. Bulstrode," "Mr. Farebrother" and "Mary Garth," are representatives of actual persons well-known to us, the well-bred sarcasm, the delicate humor, the touching pathos, the amazing knowledge of human nature, the untiring earnestness, and the chaste morality which underlies the whole tale, elevate Middlemarch at once to a place among the classics of fiction.

CROSS AND CRESCENT; OR, YOUNG AMERICA IN TURKEY AND GREECE. By Wm. T. Adams, (Oliver Optic) author of "Down the Rhine," &c., &c. (Lee and Shepard,) 12mo., pp. 347. The volume before us is the third of the second series of "Young America Abroad," and contains an amusing and instructive narrative of the travels and adventures of a part of the academy squadron in Turkey and Greece, in which sketches of the history of those countries, of their peculiar forms of government, manners, customs and principal features of interest are deftly interwoven with the amusing incidents of flood and field.

THE TREASURE OF THE SEAS. By James de Mille, author of the B. O. W. C., (Lee & Shepard,) is a story full of exciting incidents and thrilling situations of peril, being an account of the adventures of a party who went in search of Captain Kidd's treasure on the Isle of the Pirates. Professor de Mille's peculiar gift of describing hair-breadth escapes and appalling situations, is abundantly displayed in every chapter of this book.

KENTUCKY'S LOVE; OR, ROUGHING IT AROUND PARIS, by Edward King, (Lee & Shepard,) 12mo., pp. 287, is a rather sprightly tale, in which the scene is laid within the Prussian lines round Paris during the siege, and relates the remarkable adventures of two individuals, Kentucky and Cocoon, the former of whom, after many vicissitudes, marries Margaret, the latter having indiscreetly committed suicide by jumping into the Seine because he too loved Margaret, and discovered that Kentucky was the favored one.

HAND-BOOK OF THE TREATMENT OF THE HORSE IN THE STABLE AND ON THE ROAD; OR, HINTS TO HORSE OWNERS. By Charles Wharton, with numerous illustrations. (J. B. Lippincott & Co., Phila.,) 12mo., pp. 137. This is an excellent little book, and ought to be in the hands of every horse-owner who appreciates the value of a horse. It contains a notice of all the principal diseases to which horses are subject, gives short and simple directions how to treat them, and imparts a great deal of useful information concerning the management of horses in and out of the stable,

which, if followed, would alleviate the sufferings to which horses are exposed, through ignorance of their habits and requirements.

We are indebted to D. Appleton & Co., for a copy of their illustrated edition of *THE SPY*. A tale of the Neutral Ground, by J. Fenimore Cooper. This edition of the works of the great American novelist, is admirably executed; a model of typographical skill and cheapness. To say that the illustrations are from the pencil of F. O. C. Darley, is a warrant of their artistic beauty.

HARPER'S EDITION OF CHARLES LEVER'S NOVELS. Our thanks are due to the Messrs. Harper for this beautiful edition in five octavo volumes of the novels of Charles Lever. Printed on fine paper, and handsomely bound, they are the most acceptable as well as the cheapest edition of the works of the most famous of Irish novelists.

NEW MUSIC. Ludden & Bates, proprietors of the Southern Music House of Savannah, Ga., have sent us the "Lotos Galop," by W. F. Wellman, Jr.; "The Tarantelle," a brilliant piece for the piano, and the Musical Scrap Book, containing a collection of popular pieces arranged as duets for two performers on the piano. All these pieces are published by Wm. A. Pond & Co., New York.

LIPPINCOTT'S MAGAZINE for March is unusually attractive, both as to its articles and its illustrations. A new serial, "A Princess of Thule," by Mr. Black, commences in this number, and promises to be a tale of great power.

THE WESTERN METHODIST. We cannot mention in too high terms this excellent family religious paper which is published in this city by R. W. Blew & Co., and edited by the Rev. W. C. Johnson. Terms \$2 per annum. It is the special organ of the Memphis, North Mississippi, Arkansas, White River, Little Rock, and Indian Mission Conferences of the Methodist Episcopal Church, South. Every Methodist family should subscribe for it. They will find in its weekly visits much of comfort, edification and instruction.

APPLETON'S JOURNAL, since it has been enlarged by four additional pages of reading, gives in a weekly form most of the attractions of a monthly magazine. It is in every respect a good paper, and deserves the immense success which it has achieved.

THE RURAL SUN. We are again gladdened by the rays of this rural luminary which for some unexplained cause were for a time withdrawn from our sanctum. It is a carefully-edited and valuable paper, and richly deserves support. It is published weekly at Nashville, Tenn. Terms \$2 50 per annum.

THE AMERICAN FARMER'S ADVOCATE, published at Jackson, Tenn., for February, is before us. It bears evidence of prosperity and success, and is well worthy the general patronage. Single subscription \$1. Clubs of four or more only 50 cents each.

Correspondence and Answers TO CORRESPONDENTS.

Blind Stagers in Horses and Mules.

We publish the following interesting letter from our esteemed friend, Gen. W. L. Cabell, of Arkansas. Until we received it we were of opinion that blind staggers was an incurable disease:

FORT SMITH, ARK., Feb. 10, 1873.

DEAR GENERAL—I send you a remedy for blind staggers in horses and mules, as one of your numerous subscribers asked you for one.

Blind staggers is caused by a derangement of the stomach, produced by feeding worm-eaten, frost-bitten, or half-ripe corn, also from blasted or musty oats when the animal is hungry. The attack is more common in the winter and early spring months than any other season of the year. I have never known a case of blind staggers in the summer-time when the horse or mule had plenty of grass to eat. The grass keeps the animal's bowels loose, which prevents him from having it. I have known men to say that their horses died in the warm weather from blind staggers, when the real cause of the animal's death was from overheating, having been ridden or driven too hard during a very hot day. There is a great difference between the two diseases. There is no mistaking the blind staggers. The animal stops eating at once, throws up its head, the weight of the body back on its hind legs and turns around rapidly, or rears back and falls to the ground. When you find your horse or mule thus affected, put a bridle on him at once and tie him, to keep him from rearing and falling back. Dissolve from 12 to 14 oz. of glauher salts in water and drench him at once; then bleed freely in the neck. After you have taken about half a gallon of blood, give him an injection of warm soap-suds, with a little molasses, with a large syringe (no farmer should be without a large horse syringe), and continue this until you have caused a good action on his bowels and his stomach is emptied of the diseased grain. I have never known this remedy to fail, if applied when the animal was first taken. Out of forty-five animals (horses and mules) that had it in April, 1858, caused from eating corn which was both worm-eaten and frost-bitten, raised in the southern part of Kansas, I never had one to die, and only abandoned one mule as being too weak to travel. Six months afterward I recovered the same mule. If you consider the above worth publishing, you are at liberty to do so.

Yours, W. L. CABELL.

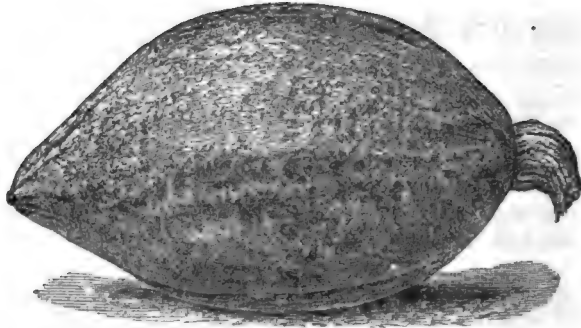
Chufas.

In our last issue, in answer to the inquiry of a correspondent, we advised strongly against introducing chufas on a farm, and stated that they are almost as great a pest as nutgrass,

which they closely resemble. This opinion seems to have shocked a much esteemed friend, Mr. Stokes, of Georgia, the writer of the following letter, in which he pronounces chufas to be a very valuable crop. We publish the letter out of respect to Mr. Stokes, from a desire to present both sides of the question, and with a view to elicit the opinions of others:

WOOTEN, LEE COUNTY, GA., Feb. 13, 1873.

EDITOR FARM AND HOME—I was mortified and surprised, not to say almost indignant, at seeing your answer to J. C. S.'s question, and in giving information about chufas or ground almond, in the February number of the FARM AND HOME. To think that as worthy a journal as the FARM AND HOME should have its columns marred by sentiments or an opinion calculated to do so much harm, is painful to any one who knows all about chufas, and it is still worse to know that these sentiments are written by the worthy editor himself. I have been planting chufas for eight years, and would not lose the seed for anything small I assure you. So far from being a pest, they are much easier eradicated than our crab-grass. I actually lost seed of them five years ago, while trying to propagate them to my utmost. They do resemble nutgrass when they first come up, but all likeness ceases in every sense after that. Unlike most cotton planters, my smoke-house is at home, and not in Ohio or Illinois, and chufas are the cause of it, for I would buy my meat before I would raise it on corn. My net pork, raised on chufas, costs me from three to four cents per pound, because chufas is so prolific and so well adapted as hog food. I had fifteen acres in them in 1871, and about the middle of August I commenced feeding them to my whole stock (fifty to sixty head) of hogs, by enclosing with a portable fence as much as they could eat in about two days, and after they (the chufas) were done growing, ceased to use the portable fence, and turned the hogs on the field, and continued them there till February, 1872, without giving any corn except enough to keep them gentle, not even to the porkers—the fattest, most thrifty swine you ever saw. I did the same last year, and every year, and if I could not have them, I would be compelled to buy my meat, as it would be cheaper than raising it on corn. The nutgrass has one long tap-root, with a rather bitter nut at every joint, going straight down into the ground. The chufas comes up a single sprig like the nutgrass, entirely destitute of this tap-root, and continues to sprout and spread until the bunches are two feet in diameter on good land, matting the ground with a network of very fine roots, going no deeper than one inch, and this network literally filled with an exceedingly sweet nut, each bunch yielding from half pint to three pints. I refer you for the truth of what I say about them to Col. R. L. Gamble, of Augusta, Col. I. V. Jones, of Burke county, from whom I bought my first seed. If you wish your readers to raise cheap meat, you must take back all you have said about



MARBLEHEAD SQUASH.

this greatest of food for hogs, and advise them to raise it. I am so impressed with its importance, that I have expended a good deal, having seed gathered for distribution among the people. It costs a good deal to gather it, as the process is very slow. I have yet some fifteen to twenty bushels for sale, and will guarantee them to do what I say, if properly managed.

Yours truly,

G. M. STOKES.

What Grass to Plant in a Grove.

COLUMBUS, GA., Feb. 3, 1873.

MR. EDITOR—It is seldom you hear from me, but I am in trouble, and you must help me out. I have a four acre lot grown up in large black-jack and red-oak trees, affording almost a complete shade, entirely free from undergrowth, naturally poor, but a little enriched by leaf mold. I wish to beautify, at same time utilize it, as pasturage for some thoroughbreds from the Jersey Islands. Am unwilling to risk the opinions of my neighbors as regards the proper grasses to grow, but assure you your opinion would be highly valued. Would it do (as preparatory to fall sowing) to sow oats upon the land in March? If it is convenient, let me hear from you in your next.

ENQUIRER.

Orchard grass is beyond doubt the best grass to sow. We see no advantage to the land in sowing it now in oats as a means of preparation. It would be better, as the land is naturally poor, to sow it in field peas in May, and when the peas begin to form, to plow the vines under. Then sow the grass seed by itself in October.

Farcy.

PERRY, GA., February 10, 1873.

EDITOR FARM AND HOME—Will you give in your next number of the FARM AND HOME the best remedy for farcy? I have a mule that has it in the left hind leg; been afflicted about four weeks. The leg is very much enlarged with lumps along the leg from ankle to thigh. Are they fit for use while suffering from the disease? The glands about the throat are swollen.

PERRY.

There is no cure for farcy. The disease is caused by the same poison as in glanders, the only difference being that in farcy the disease eliminates itself through the skin, beginning on the inside of the thighs and arms, while in farcy this takes place through the mucous membrane of the nose. A farcied horse or mule should be destroyed like one glandered. The disease is quite as contagious as glanders.

The Marblehead Squash.

MR. JAMES J. H. GREGORY, of Marblehead, Mass., so well and favorably known as a seedsmen and horticulturist, has recently discovered, or, we should rather say, has produced a new squash, which excels all his former triumphs in the raising of that vegetable. It is called the "Marblehead squash," and is described as follows:

"This new squash, as a rule, is characterized by a shell of a more flinty hardness than the Hubbard. It is usually thicker and flatter at the top. It has a greater specific gravity. The flesh is of rather a lighter color than the Hubbard, while its combination of sweetness, dryness and delicious flavor is something really remarkable. In yield it equals the Hubbard, while its keeping properties are declared to surpass that famous variety. In the important matter of purity, it excels the Hubbard and every squash that I have ever raised. Its outer color is a light blue; not to be confounded with the blue colored squashes that come at times from the Hubbard seeds—mongrels made by a cross of the Hubbard and a thin-skinned squash which we used to call Middleton blue, which we were raising before we knew of the Hubbard, and raised for a few years after we had the Hubbard, side by side with it. If the seed of these mongrels be planted, their hybrid character will be seen by a terrible sporting, so dreaded by every farmer; while, on the contrary, the crop from the seed of the 'Marblehead' will be found to excel in purity any standard variety of squash."

Insurance Department.

When is it Safe to be Without Life Insurance?

Some men are in the habit of settling the most important questions by looking at but one side of the subject. And very often the side to which they look is the one to which they are most inclined before any investigation is made; and the result is, that a conclusion is reached before the question has been fully considered. One or two facts on the side of the question to which the mind is inclined settle the course to be pursued, and the facts on the other side receive no attention, however numerous or important they may be. The subject is treated as a mathematical problem, in which, if the affirmative is proved, the negative is disproved. But practical questions are not always to be settled by mathematics. After the evidence on one side has been heard, the evidence on the other side must be heard before a safe conclusion can be drawn. And our inclinations should have nothing to do with giving shape to the conclusion.

The necessity for insuring life is often decided by a course of reasoning similar to the above. Some men are able to point out a reason why they should not insure, and this decides the question with them, without looking at the many reasons why they should insure. A long-lived ancestry, a robust constitution, correct habits, and an employment which is not hazardous, are sufficient reasons for some men to decide not to insure; and especially if, in addition to these facts, there is an idea that they are quite shrewd in the management of their business, insurance for them is superfluous.

They look upon it as a good thing for poor calculators and managers, and those whose constitution is almost certain to fail, in a short time, under the ordinary burdens of life. In their own case, while they can only say that death is improbable, yet they act as if it were impossible. If the pecuniary loss by death to a dependent family was as improbable as the death of the one upon whom the family is depending, the necessity for insuring might be less. But when the loss comes, it is the same whether the death was improbable, or probable, or certain. What the loss will be if one should occur, is a question to be considered, as well as the probability or improbability of its occurring.

If a family is left without support, the fact that such an event was unexpected does not mitigate their sufferings; and for this reason no man with a dependent family should fail to insure his life. We may have good reason for expecting to live many years, yet it matters not how good the reason may be, he must say: "I do not know how soon my death may occur. This day may end my life. Death is strong enough to cut off the most robust, and often does its work in the shortest time."

In determining the question, when it is safe to be without insurance, we must consider the chances for dying, as well as the chances for living. If we neglect the chances of either, let it not be the chances which are likely to leave a dependent family without protection. If a prudent man has nine chances to secure a home and one to lose it, his great study and efforts are to prevent that one chance from occurring. He makes every exertion to render that one chance, unfavorable to securing a home, impossible to occur; and every reasonable man approves the motives by which he is actuated in these efforts. He is recognized as one discharging a duty which he owes to himself and family.

The fact that he may not live to enjoy that home does not lessen his anxieties or efforts, but often greatly increases them.

And why should it not be so in regard to insuring life? Insuring renders the one chance of losing impossible. It secures the home; and if it is desirable to prevent a home from being lost on any other account than death, is it not equally desirable to prevent it from being lost on account of death?

No matter how many or how good the chances may be which a man has for living, still life is uncertain. And the least degree of uncertainty makes insurance necessary, makes it a duty.

If a man is not inclined to insure, and his attention is directed to tables of mortality amongst healthy lives, he sees the numbers which have lived to a certain age; but he can't see how many have died before reaching that age. Or if he does, it is quite insignificant compared with those who have lived, and he looks upon it as a very good guarantee that he is to enjoy a long life. It seems so easy and natural for a man to argue himself into the idea that he will be amongst the lucky, and some one else amongst the unlucky ones, that he forgets what may be the consequence of laboring under a mistake on this subject.—*Insurance Monitor*.

Poetry.

[From a small volume of "Poems: Original and Translated," written by the Hon. A. B. BERESFORD HOPE, member of the British Parliament, printed only for private circulation, we have been permitted to copy the following beautiful tribute to the Confederate dead:]

The Confederate Dead.

In pine-brake and on mountain battle-ground,
In river drift and Mississippian swamp—
Each as he fell—their overt work undone,
Their country trodden down and desolate,
Rest until Doomsday the Confederate Dead.
Yet in that bitter shipwreck, and the crash
Of all which in the passionate resolve
Of patriotic zeal they staked and lost,
They were not servants profitless; their names
Glow on the roll which Duty keeps for Fame—
That golden roll with iron pen engraved,
Dipped in the heart blood of the honest dead,
Weighed well with truthful balance, scrutinized
By eyes that love no guile, and grovel not
In vulgar worship of a forced success,
They lived accepted in the chosen band
Of those who in short time encompassed deeds
Whose worth the span of rolling centuries
Preserves in undecaying memory—
Stout working preachers to their fellow-men,
Of single-hearted stern self-sacrifice,
Whose unwritten sermons shall be garnered up
In the dim cycles of the coming time,
For the refreshment of sick human kind.
Wealthy and easy, lords of human toil
The children of a climate whose soft heat
Dissolves in luxury the English nerve,
They cast off sloth, and counting wealth as dross,
Pressed to their bosom hunger, wounds and death
To make a nation* and repel the swarm
Of those monopolists of liberty
Who proffered union at the cannon's mouth,
And taught the sinfulness of freedom sought
At price of self to Washington's own race.

God grant that if the day of trial fall
On this proud wealth-swollen realm, when class with class
In anger meets by demagogues inflamed;
If Northmen's iron-clads spread their black, broad backs,
Turned hitherward upon the Atlantic waste,
And light-limbed Frenchmen, emulous to raze
The score of Wellington and Waterloo,
Swarm on the wind-dried cliffs of bleak Boulogne—
Our English sons of luxury and sloth
May go to school at the Confederate Dead.

*"Jefferson Davis has made a nation."—Gladstone.

In a recent debate a member of the California legislature exclaimed: "The honorable gentleman from Calaveras county is undoubtedly a person of great abilities, a man of talent, a natural born genius; but there is one thing I defy him to do; and that is, *to bite the bottom out of a frying pan without smutting his nose.*"

From the Public Ledger.

CRUISE OF THE OLUSTEE.

BY GEORGE W. GIFT.

[CONTINUED.]

The starboard screw was slowed, the helm put hard over, and the good craft answered like a racer. But the enemy saw the movement to flank him and followed our motions as soon as possible. The same ceremony of showing lights and answering was gone through with, but it had to come to an end, and at the end came the broadsides and hissing fuzes and hurtling shells, all of which was very fearful to look at, and created a great deal of noise, but inasmuch as we were not struck, that part of the performance had as well have been omitted. We were now flying in the direction of the beach, hoping to turn the enemy and get away, but the leadsman soon admonished us that the water was rapidly shoaling, and, as our speed was no less now than it had been, something had to be done at once. A gap showed itself between two ships of the enemy, who had also discovered the shallow water, and were hauling off. That was our chance. This time the port screw was slowed, and in an instant we headed right between them, took their fire, dashed through, and were again on our course for sea. We sighted but one other vessel, which crossed our track astern, but did not see us. When we crossed the bar and got into four fathoms of water, the time was observed by an officer charged with that duty. Some minutes after losing sight of the last mentioned vessel, we considered ourselves so entirely clear of the enemy, that the guns were ordered to be secured and the regular watch set for sea.

The time was again observed, when we found that but thirty minutes had elapsed since we left the bar! I have been in a good many squally places before and since then, but I do not remember any half hour that seemed quite as long as that one. Not that the danger had been very great, but the changes were so rapid and sudden that one was quite ready to believe that he had lived hours instead of minutes. In two hours from the time our first course was shaped, we reckoned ourselves south and clear of the extreme end of Frying Pan shoals, and drew up the patent log, when we found that we had made thirty-four knots (a knot is the sixtieth part of a degree of latitude, or a geographical mile), or seventeen knots an hour. After the first thirty minutes, our speed was slackened in order to accumulate and hold steam for a "spurt," in case a pursuer should suddenly appear; consequently I think I spoke within reason when I said we were going twenty knots when we were being chased; and I honestly believe that we could have beaten any American-built ship on the blockade that night at least ten knots in an hour! I state these facts for a particular purpose, to-wit: to compare the skill of the mechanics and engineers of young and enterprising America, with that of those of effete and worn-out England. In our country we have liberty and common

schools. Every man is a genius and a sovereign, and are vastly superior to those old country people who have no liberty and no common schools, and who are not geniuses, but poor, ignorant, benighted slaves. This is the popular idea, and, like most popular things, is a fallacy. We do pretty well for a new country, but we are new.

Being clear of all obstructions and fairly at sea, we hauled out due east to get into the Gulf Stream, to drift with it to the northward; and besides we wished to be well off shore out of the track of the armed cruisers. The sea was smooth, and by noon of the next day, which was Sunday, we being as far off as was necessary, shaped our course for the capes of the Delaware. We had a young man on board who had remarkable powers of vision, and all day long we kept him at the mast-head, sweeping the horizon for sails. Like an hungry fish-hawk, we were eager for prey. But not a victim did we espy, which made our first day out as tame as if we had been voyaging on a mission of peaceful commerce. During the night the same thing occurred, and we sped on until ten and a half o'clock Monday, when "sail ho!" came from the lookout aloft, and everybody turned out to see and hear. We had been going at moderate speed, but now the engines were hurried up, and we directly made out a speck ahead, which soon commenced rising rapidly out of the water, and by noon we were alongside a large Bremen barque, with Guttenberg painted on her stern. He was alive with male emigrants bound to Baltimore, recruits, doubtless to Grant's army. We were flying American colors, and gave our name as "the United States steamer *Bermuda*, from Charleston for New York." This was a water-haul, but still there was some excitement in it.

Not long after leaving this one, "sail ho" came again, and as in the former instance was right ahead. By four o'clock we made out the name of the vessel we were chasing to be the *Empress Theresa*, of Baltimore. We were flying American colors, and the poor fellow soon had his colors on deck, as if he feared we would fire at him—of which we had not the most remote idea, as the guns were not even uncovered. His mainyard was hauled aback, and I went on board to dispose of the prize. I took with me a crew well-trained on the previous cruise in the art of destroying ships with neatness and dispatch. We had a dozen sharp augers with which to perforate the hull before firing, and a couple of buckets of turpentine to make sure of a conflagration.

On the poop-deck of the prize we had seen a couple of ladies as we came up. As I climbed up the side of the vessel the captain and the ladies stood ready to receive me. The former signified his surrender by handing me a paper of copper pump tacks, and the ladies, as in duty bound, approached the hysterical state, and begged very earnestly that we would not kill them. I do not recollect to have occupied a more embarrassing position before or since. I was prepared to play the gallant in the most

approved style, and here I was taken for a cut-throat. I think I blushed and stammered worse than the victims. However, business is business, on the high seas as well as elsewhere, so I soon settled matters. My first care was to relieve the captain of all further responsibilities and send him to pack up his effects and those of the ladies (one of whom was his wife and the other her sister), to put them in bags, and be quick about it that we might transfer them to the steamer before dark. In the meantime the Bos'n had gone forward and set the augers in motion, and was smashing up light material to kindle with. All the good lines and gear that could be got at easily we transferred, as such things were very scarce at home. Although the fellow was from a coffee port, he had on board less than a hundred weight of the precious berries, and but little else in the way of commissary stores worth having.

Among the men who accompanied me was the Master-at-arms, Michael Bow by name, who was an artist in the matter of plundering. The crew of the prize were all Norwegians, and could speak but little English, but Bow "discouraged" them in a language they seemed to understand, for he came forth from the fore-castle with a fair per centage of all the clothing owned by the prisoners, among other things six "seuwester" hats, stuck inside one another, like tubs in a nest. I remonstrated "with my man upon the impropriety of his conduct; "our mission," I said, "was to burn ships and cripple the commerce of a nation, not to rob individuals." I admired my speech, but Bow was disgusted; said he: "That's well enough for the loikes of you, sir, but it's hard to let a Dutchman carry goods to Ni Yark, where there's a plinty already." Bow was a pet of mine (and a philosopher too), so I overlooked the offense and got one of the hats—every man has his price, you know.

As a matter of course, the cabin was surrendered to the ladies to make preparations for their departure. In a very short time they came forth very much more composed than when I first met them, and arrayed in their best clothes; the ruling passion still strong; an impression must be made upon the pirates. Their effects were all packed, and I had them off to the *Olustee*. The breeze was freshening with the going down of the sun, so I hurried up as fast as possible the work of destruction. A little after sunset we applied the matches, and soon everything was ablaze. We used the torch forward and aft, and instantly the red demon was doing his work. The flames caught the tarred standing rigging, and ran aloft like ready-made sailors, seizing upon the sails and wiping them from the yards in an instant. The well-seasoned spars took fire and showed out against the darkening sky lurid and terrible. This is war. Unless I be permitted to play commissary or quartermaster I desire no more of it.

We pulled back to the steamer from the burning wreck, run the boats up to the davits and started toward the north. I was pretty cold and pretty tired and somewhat hungry,

and as it was our supper hour I tumbled down into the ward-room, totally forgetting that I was to meet ladies. I was soon warned, however, for there sat my two friends at the table, not only composed but quite cheerful, and they greeted me at once quite cheerily as the one who had burned their ship. Our two young lieutenants—B-nton, now an Episcopal minister in New York, and Gardiner, editor of a paper in Virginia—had vacated their room and put the ladies in possession; an eight-inch shot heated in the furnaces under the boilers supplied the place of a stove, and even a nurse for the boy had been found, who was crowing and laughing as though no ships had ever been burned. The crew were placed under the charge of a sentinel, but the captain and his mate were regarded as passengers. The ladies were Baltimoreans, and pretty good "secesh," while the captain was a shrewd down-easter, who, knowing that he would be ashore in a few days, endeavored to find out as much as possible in a quiet, decent sort of way. Before parting with our prisoners we became quite good friends, and they promised to send messages to our friends North.

In the night the wind freshened, and by morning we were jumping into a brisk nor-wester, with the white-caps heaving high. During the day it was too rough to chase the single sail we saw; so another valuable day was lost—not lost, either, for we were all the time going to the hunting-ground. On Wednesday we were again out of luck. Fell in with a British schooner with a broken rudder, and chased a British brig bound off from our course. This latter had a good breeze, and persisted in keeping on his course, although he must have seen us after him for a couple of hours. However, we caught up after awhile, but got nothing for our work. The rascal was quite surly. At noon we were sixty miles southeast from Cape Henlopen. Our ground was between New York and Philadelphia, and we are getting near it. After dark we sight a light-house on the New Jersey shore, and lay by to wait for business on the morrow. We see a steamer during the night, but a steamer may also be a man-of-war, so we let her pass. At daylight we have calm weather, a smooth sea and a couple of fine schooners near by, which we proceeded to slaughter. One was bran new, on her first voyage, and laden with lime. Her lumber port we knocked out, and she settled to the bottom, with the hot lime seething and boiling. The other had a cargo of canned lobsters in cases and Irish potatoes. We found it very difficult to get through with this one. The men would put in one more case and another barrel of potatoes. It was astonishing with what rapidity our green conscripts learned to use the oar, and how nimbly they climbed up the sides of a prize when the chance of better rations, a blanket, or even a shirt, offered.

We now had the crews of three vessels on board, and it was advisable to be rid of them. The wind was off shore and nothing would be lost by letting them go, as it would be several

days probably before they could report us. Opportunely an English schooner appeared, bound to New York. He was a round-bowed, dumpy little bruiser, not capable of going more than four or five knots an hour under the best circumstances. The old Charleston pilot, whose temper had been soured by a thirteen months' residence in Fort Lafayette, rubbed his hands gleefully as he observed the model of the packet which was to take away our people. We gave the little craft some water, bread, pork, lobsters and potatoes, paroled the prisoners and sent them on their way, and in a hurry, too, for more game was in sight above the horizon. The new-comer proved to be a large ship from New Orleans laden with sugar and a lot of second-hand castings and fences, which I presume had been stolen and were being shipped away. A party was put on board to use her up, while we went up to windward to inquire after two sails coming in sight in the north-east. Both proved to be prizes, one, a fine brig and the other a schooner. It was late before these three vessels were disposed of, and by dark the wind was freshening to a gale from the northeast, with mist and squalls of rain. This ugly appearance of the weather admonished us to get toward home; therefore we headed to the southward, intending to spend a short time off the capes of Virginia with the hope of falling in with vessels bound for Hampton Roads with army stores.

Thanks to the favoring gale, we were off the entrance to the Chesapeake on the following forenoon, and found a fleet of brigs and schooners, all Americans; but, no thanks to the gale, we were unable to lower a boat to secure the prizes. I think we had ten or a dozen in sight at one time, all hove to under short canvas, making the best of the weather. We steamed up through the fleet, passing so close to several of the vessels as to be able to read their names with the naked eye. But nothing was to be done, and we waited in patience for the sea to go down. Thus the day passed away, and the sun was nearly down to the water when I happened to look out on the side opposite the fleet and saw a large, black, side-wheel steamer standing in toward the capes. This fellow we judged to be a man-of-war; he was not more than four miles away, and being larger and heavier than we, and a side-wheeler, had a decided advantage in a chase with a gale blowing and a heavy sea running. However, there was but one thing to do, and that was to run, sea or no sea, and we did it. We carried a couple of fore-and-aft sails, and unfortunately it was deemed proper to run up our foresail, which attracted the notice of the steamer, he not having seen us before. As soon as he observed our sail he headed for us, and we commenced doing our best in getting away from him.

[TO BE CONTINUED.]

It is good discretion not to make too much of any man at the first; because one cannot hold out in that proportion.

Vol. IV. No. 6.

THE
SOUTHERN

FARM & HOME



APRIL, 1873.

W. M. BROWNE, EDITOR.

PUBLISHED BY

BOYLE & CHAPMAN,
MEMPHIS,
TENN.



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R. G. CRAIG & CO., Agents,

Memphis, Tenn.

Nov. '72, 6m.

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A REGULATOR.

UNSURPASSED FOR THE CURE OF DISEASES PECULIARLY INCIDENT TO WOMEN.

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CHLOROSIS, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION, SUPPRESSED MENSTRUATION, LEUCORRHEA, UTERINE ULCERATION, AND all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really marvellous that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and thus we are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and similar affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a liberal trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. Be sure that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

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THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA, WHOOPING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

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For Sale by Druggists and Dealers in Medicines Everywhere.

NONE GENUINE WITHOUT OUR PRIVATE PROPRIETARY STAMP.

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History of the County of York



Map of the County of York

The County of York is situated in the north-east of England, and is bounded by the North Sea to the east, and by the County of Lincoln to the south. It is a large and fertile county, and is one of the most important in the Kingdom. The population of the county is about 1,000,000, and it is one of the most densely populated in England. The county is divided into several districts, and each district is governed by a local authority. The county is also one of the most important in the Kingdom, and it is one of the most fertile in England.



A. B. Gordon

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV.

MEMPHIS, TENN., APRIL, 1873.

No. 6.



Farm Work for the Month.

By the time this number reaches our subscribers most of the corn crop will have been planted and preparations should be completed to commence planting cotton. In some of the more favored localities cotton planting will have begun already. We are well satisfied, from our own experience and observation, that success in cotton planting, and by that we mean raising the largest crop, depends mainly on the manner in which the soil has been prepared. Of course, careful planting of the seed, and good, clean cultivation after, are essential to success, but these will avail little unless the soil be deep, friable and well pulverized.

This year, on account of the unusually late spring, many planters will excuse themselves for slovenly and partial preparation by saying that they had not time, that they had to put the seed in the ground "the best they could." It will be found, however, next fall, when picking time comes round, that those who have taken time to prepare well every acre they plant, even though they have been obliged to plant fewer acres, will have raised more cotton, and at less expense, than those who had to "make out the best they could."

With reference to cotton planting, we would urge all our friends to use a planting machine to distribute the seed, and not the old-time plan of hand planting. The machine distributes the seed evenly in a narrow line in the center

of the bed, forming when the young plants come up a green row like a ribbon of even width and thickness from one end to the other, thus facilitating chopping and the first working. From one bushel and a half to two bushels of seed are an abundance to plant an acre and insure a good stand. The only advantage in the thick planting by hand is that if the ground be baked or cloddy, the surface is broken by the upward pressure of the mass of sprouting seed; but this is no advantage in well prepared land, and we doubt whether in any event it offsets the disadvantage of the broad, crooked and crowded rows, often half covering the middles, imposing treble labor on the choppers and increasing largely the difficulties of the first plowing. We believe that the total cost of the seed-planters is paid back in one season by the saving in labor in planting and cultivation.

We have frequently, in former numbers, advised our readers not to waste time, money and hopes in planting poor upland in cotton, without manure. The result must be loss and disappointment. If no effort has been made to collect manure at home in sufficient quantities to enrich the land for the crop, our advice is to purchase some of the commercial fertilizers which have been fully tested and found to be good, and apply them at the rate of two hundred or two hundred and fifty pounds per acre, strewing the manure in the row before planting. We do not believe that depositing the fertilizer in the bottom of the center furrow when bedding the land is the best way. We think that the fertilizer is in this way buried too deep, and is not available for the nourishment of the young plants. It is better to open a shallow furrow in the center of the bed just before planting, using one of the dis-

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tributing machines, which opens the furrow, strews the manure and covers. Thus the bed is freshly stirred and mellow when the seed is sown, and the manure is near enough to the surface to be available at once for the nourishment of the plants in their first growth.

CULTIVATION OF CORN.

We do not know that we can add anything to the detailed directions for the planting and cultivation of corn contained in the essay of the late James M. Chambers, published in the March number. We would only emphasize the advice as to paying close attention to the early workings of the crop, as its success depends mainly on getting a good start. Close, deep plowing at the first working is indispensable. Use a long, narrow plow for *siding* and select the most careful plowmen to do this work, men who will run close to the plants and yet not cover them with clods. We would also advise that the first hoeing be carefully and thoroughly done, seeing that the grass and weeds and all foreign growth are completely removed, and not, as so often happens, merely covered up, to shoot forth again with renewed strength, and thus consume a large portion of the nourishment which should be appropriated exclusively by the young corn. In thinning to a stand care should be taken to remove the plant, *root and all*, and not cut it off at the surface and leave it to sprout again. In a word, even though it appears tedious and slow, it is really gaining time to pay due attention to every detail of the early cultivation of the crop.

FIRST WORKING OF COTTON.

By the time the corn has been *sided* and thinned to a stand the young cotton will demand attention. The first thing is to chop it into bunches, leaving the width of a hoe between each bunch, and at the same time cutting away all young grass or weeds. Not more than five or six stalks should be left in a bunch, and not less than three. The best thing is to side the rows, running a furrow on each side, either with a turn-plow, the bar next to the cotton, or where the land is loose and clean, with a sweep. But each planter must be guided in the performance of this work by the season and the condition of the soil. The best cotton crop we ever saw on upland was *sided* with a subsoil plow, run as close as possible to the plants.

SWEET POTATOES, FORAGE CROPS, &c.

Plant largely sweet potatoes, drilled corn and millet, on well prepared and well enriched

land. Let no hurry "to put in" the cotton crop, or "to get round" to the corn induce any Southern planter to fail to provide for a liberal supply of sweet potatoes and forage. Let each be assured that the plantation which comes the nearest to being self-sustaining is that which is the best managed and most remunerative.

For the Southern Farm and Home.

Are the Hulls of Cotton Seed Good for Manure?

MR. EDITOR—One of the greatest humbugs of the age is the effort to make the farming public believe that the manurial properties of cotton seed are contained in the hull, and that if we only keep the hulls we may sell and send away all the rest of the seed without injury to our land.

Now, sir, I maintain, and I do not profess to be an agricultural chemist, that a bushel of the hulls of cotton seed are of no more value to land, as a fertilizer, than are a bushel of pine straw or chips. Both serve to loosen the soil and keep it porous, and to this extent are beneficial, but as a manure the one is about as valuable as the other. I believe that the seed, after the oil is expressed, is quite as good a fertilizer as before. I attach great value to cotton seed meal (ground cake) as a manure, because it contains all the ammonia of the seed, which, though it is not the exclusive source of fertility, by any means, is undoubtedly the most powerful stimulant to vegetable growth that is known. The fertilizing properties of cotton seed consist in the nitrogen and hydrogen which they contain, and which, as the seed decompose, unite and form ammonia. Those who want to persuade us to sell our seed, that they may make oil and export the cake to England, will try to convince us that the hulls are the thing for us. They will take the worthless nuts, and give us the shells to get fat on, and to aid us in carrying out their counsel, they offer us all sorts of "decorticators" on the most favorable terms. And we are fools enough to believe such nonsense, and delude ourselves into the belief that we are growing rich by selling our seed, if our benevolent friends will only give us back the hulls to *enrich* our land. I have heard of pulling chestnuts out of the fire for others to eat, and I believe it is not a profitable operation. I will give twenty bushels of hulls for every bushel of "decorticated" seed that any one will give me.

ANTI-HUMBUS.

FLOYD Co., GA., March, 1873.

For the Southern Farm and Home.

Letter from John Plowhandles.

FOREIGN IMMIGRATION.

MR. EDITOR—I scarcely take up a paper nowadays that I do not see one or more articles or communications in it, advocating some plan of foreign immigration, and showing that our only chance to get an adequate supply of labor to make up for the falling off in numbers and industry of the negroes is to send to the old country and induce Europeans to come among us. I have examined carefully many of these immigration schemes, but I have never seen one that to my mind offered a reasonable prospect of successful accomplishment. In the first place I do not believe that this imported labor will ever be worth a cent, much less remunerate the expense of importation. I do not believe that Europeans are physically able to cultivate our corn and cotton through our hot summers. They may do very well as servants on stock, grain and grass farms. These are occupations to which they have been trained and accustomed; but for our staple crops, which require steady and continuous labor under the broiling sun of July and August, European laborers would be obviously worthless. I mean, of course, the work that is necessary on plantations. I do not and will not contemplate *patch* farming, which implies cutting up our lands into two and three acre farms, and must result in the destruction of our supremacy as a cotton producing country.

It may be desirable that we should offer inducements to foreigners to come among us, buy our lands and become *settlers*. This class would bring money and brains with them, as well as muscle, and to this extent they might be considered a benefit, but they would be employers of laborers, and not laborers themselves. I confess, sir, I am of the number of old fogies who have no eager desire to dispose of our lands—the only property we have left to leave to our children and our children's children. I think that our population is increasing quite as fast as is desirable, and I am one of those who do not believe that prosperity is a necessary consequence of dense population. I am convinced that the contrary is much nearer the truth. In the countries from which we expect to draw this immigration the population is very dense as compared with ours. And what do we see there? We see immense wealth in the hands of a few, and immense poverty in the hands of the many—

the rich becoming richer and the poor poorer every day. Indeed, is it not the chief argument we must employ to persuade these men to quit their native land and come to ours that from the thickness of their population they have no chance to better their condition at home, and that they should come among us and purchase our cheap lands? If we have plenty of land we have plenty of children and grandchildren to occupy it, and I doubt very much whether we have any moral right, for any immediate gain, to divest ourselves of the lands which should descend to our offspring, and which are all we can leave to them.

But I have digressed from the purpose I had in view when I commenced this letter. I intended to argue that imported European laborers would prove worthless even if it cost nothing to import them; and I think I can appeal to those who have made the experiment with Swedes, Norwegians, Danes and Germans, to testify in favor of my position. Whenever we find that we cannot employ the negroes—that this race, created, I believe, expressly by a wise Providence to be our laborers, is disappearing from our country—then we must change our entire system of production, abandon our present staples and adopt a system that will suit such labor as we may be able to import.

I confess that Sambo is not nearly as good a laborer now as he was a dozen years ago; but bad as he is, I would sooner to-day have one negro to help me to raise cotton and corn than any three Swedes, Danes or Norwegians that Scandinavia could send me. It is vexatious, to be sure, to find that when your crop most requires work your laborers are gone to town to listen to a stump speech from a scalawag or carpet-bag politician, or to vote for an Aaron Alpeoria Bradley, or which is still more disgusting, for a Whiteley for Congress, or for the Legislature; but when they return they will do better work than the Swedes who have never gone beyond the fence. I maintain, and have always maintained that the white men of the South can, if they choose, control the negro and make him the best and most profitable laborer for their purposes that can be found anywhere. Wisdom, justice and moderation will inevitably prevail, and the day will come—it is coming fast—when the negroes will see and admit that their best friends are their old masters, and that their true interests depend on cultivating the confidence, good will and protection of the white man. The wealth of our

country is its supremacy in the production of cotton. It is upon this staple we must mainly rely to rebuild our fortunes, and when we are compelled to cut up our plantations into truck patches, or rely on Europe to supply us with white labor, our cotton supremacy will cease to exist, and we must look to some other industry to support us. Import European herdsmen, shepherds, grooms, haymakers, laborers for grain farms, and house servants. They are the best and most skilled; but leave the cotton and corn fields to the negro and the mule, which in combination constitute the very best labor.

I expect, sir, to be abused by every advocate of foreign immigration, and especially by those who have founded "immigration societies" on the Koopmanchap plan; but I cannot look on in silence and see our people nursing a delusion which must result in bitter disappointment as well as in heavy pecuniary loss.

I cannot coincide with the views of the Rev. C. W. HOWARD on this subject, because I believe we should stick to our lands as the future fortune of our descendants; but I can agree with him much more readily than I can with those who propose to import laborers from Europe to take the place of the negro in the cotton field.

Yours respectfully,
JOHN FLOWHANDLES.

For the Southern Farm and Home.

Sheep Raising the Cheapest Renovator of Worn Lands.

MR. EDITOR—You are quite right in your advice as to sheep raising at the South. It is the most economical and most effective way of restoring exhausted lands. I have seen it tried for this purpose in England by some of the best farmers in that country of garden cultivation, and lands which would otherwise be too poor for cultivation are made to produce abundant crops of grain, grass and roots. And remember that this profit is over and above the profit from the sale of sheep, from the meat sold to the butcher and from the wool,—all of which, when the sheep are properly tended, are very remunerative. The process of restoring worn-out land is done by sheep folding, and is not, I should fancy, well understood by many of your readers, who know nothing of sheep husbandry. Let me explain how it is done. A certain amount of land is well prepared, heavily manured and planted in turnips or some other root crop. Turnips, I think, are the best. When the turnips are fully grown a portion of

the field is enclosed by a movable fence, which can be made at a trifling expense out of pine rails, and as many sheep are penned or *folded* within the enclosure as will eat the turnips in the course of a day. The fence is then moved so as to inclose another space of like size, and so on until all the turnips in the field are consumed. When this is done the entire field is evenly manured with the solid and liquid droppings of the sheep, and the manure is spread without any cost of hauling or distributing. The same folding process may be continued or alternated with fields of rye or oats until a large area of land is heavily manured in the very best way. There are thousands of acres of land in every State in the South which do not now yield enough to pay the taxes, which, were this system adopted, would be made to yield large crops of corn and cotton. As an example I refer to the well known case of David Dickson, the well known cotton planter in Georgia, who, at the instance of Mr. C. W. Howard, tried the folding process on a four acre patch of turnips. He planted the patch the following season in cotton, and on land which would have yielded perhaps one thousand pounds of seed cotton to the acre he gathered four thousand pounds of seed cotton per acre. Thus you see that four acres on which sheep were folded yielded as much as sixteen acres cultivated in the ordinary way, and the labor of cultivating the four acres that produced the sixteen thousand pounds of seed cotton was not greater than that employed on any other four acres of this plantation.

But how many are there who plant cotton and do not gather the half of one thousand pounds of seed cotton to the acre? How many are there who do not gather upward of two hundred and fifty pounds, and yet they go on planting cotton and becoming poorer every year, and would say to you or me to-day, after reading what I have written, "If I must quit planting cotton to try this sheep and turnip business I won't touch it, because I can't afford it."

It is estimated that, with proper management, a flock of five hundred sheep will manure five hundred acres of land in a year. The wool, the meat and the increase will yield double the amount expended for feeding and tending them, and I have no hesitation in saying that the five hundred acres thus manured will in five years bring double the amount it was worth before it was manured. Surely this is a good investment.

NORVAL.

Value of Commercial Fertilizers.

By request of several subscribers we republish the following able article on the Comparative Value of Commercial Fertilizers, which was written for the *FARM AND HOME* by Prof. W. Leroy Broun, the distinguished President of the State Agricultural and Mechanical College of Athens, Georgia, and published in *March, 1871*:

COMPARATIVE VALUE OF COMMERCIAL FERTILIZERS.

At your request I herewith forward you a few notes on the subject of the value of commercial fertilizers. No reference whatever, is intended to be made to the comparative value of the fertilizers generally in use in this country, nor to their value, as judged by their adaptation to certain lands, by the percentage of increase of the cotton or corn crops which they may produce. But by the term "value of commercial fertilizers," we mean their value as viewed from a chemical standpoint, their value as dependent upon the number and proportion of valuable constituents contained, and upon the price in market of these valuable constituents as far as may be known.

We deem this subject of prime importance to our people. There can be no doubt that in some instances fraudulent dealers have imposed on the community impure articles, to the injury of the consumer as well as to those reliable manufacturers of fertilizers with whom they have come in competition.

Impure articles thus imposed on the trade have tended to produce doubt and want of confidence in the minds of consumers in regard to others that may be of value.

It is apparent to any reflecting mind that the whole trade of commercial fertilizers is yet in its infancy. They will continue to be used, and used more judiciously than heretofore. Standard fertilizers will be made by reliable companies, and from the results of competition must be sold at simply a fair profit.

It strikes us as altogether taking a step backward and contrary to all laws of progress and economy to advise a farmer to undertake to purchase the raw material and to manufacture his own fertilizers.

A manufacturer of fertilizers is entitled to a legitimate profit on his skill, capital and labor, just as a manufacturer of cloth, tobacco, hats or shoes. What that profit should be, the laws of trade will determine, and it is apparent this same law must hold in fertilizers as in other

manufactured articles. The farmer has his own business to attend to and can better afford to purchase the manufactured article, than he can to purchase the raw material and manufacture for himself.

But this has somewhat drawn us off from our line of thought.

Considering that the use of fertilizers will become much more general, and that the trade will in coming years assume large proportions, we say we deem it of the first importance that our people should clearly comprehend in what consists the value of a fertilizer, so that they may form at least an approximately correct judgment in regard to the value of an article guaranteed to contain a given per centage of valuable elements.

We avail ourselves here of a valuable report made by Prof. S. W. Johnson, of Yale College, to the Board of Agriculture of Connecticut.

Prof. J. says: "It is on all hands fully conceded that appearance, odor and all external indications are of little use in forming an opinion of the merit of a superphosphate, and may mislead in case of other commercial fertilizers. The only safe guide is a chemical analysis. Even this is liable to fail in certain cases, but in general, if a series of manures has been examined with proper care, the results furnish a reasonably safe and sufficient basis for comparing their merits, and in all cases chemical analysis can easily protect against gross fraud."

"To estimate the real commercial value of a fertilizer in dollars and cents on the basis of chemical analysis has its difficulties, which are great in the infancy of the business in concentrated manures, but become less and less as competition, intelligence and honesty bring the manufacture toward a settled basis, and develop and equalize the effects of local facilities."

"With us there is yet a lack of something besides competition, perhaps it is a lack of intelligence in the manufacturers, certainly it results in an evil which proper intelligence on the part of farmers who use commercial fertilizers would speedily correct."

In 1856 Prof. Johnson, following the method of Stoeckhardt in Germany, introduced in this country the valuation of commercial fertilizers based on the market value of the important chemical constituents contained in each, as shown by chemical analysis.

In reference to this he states: "The valuation is not intended to fix in all cases the proper selling price for a fertilizer. * * * That the chief use of valuation is for making a comparison between different fertilizers. At the same time the valuation should be as nearly correct as it is possible to make it, and should so closely represent commercial worth that the farmer may not err in refusing to expend his money for any article whose cost much exceeds the calculated value."

Now if the cost of any given number of pounds of the valuable constituents laid down at any given place could be absolutely determined it would be a matter of simple arithmetic to determine the commercial value per ton. But it is by no means a simple matter to determine the cost of such substances as nitrogen, phosphoric acid, etc., per pound. By taking the results of others we may arrive at a value approximately correct, at least one that will answer for obtaining a comparative value of different fertilizers. If our conclusions differ greatly from their real value, manufacturers, who are better informed, can correct us.

We have every reason to believe that the commercial value of these constituents, known only to the chemists, will soon be fairly established.

It is generally conceded that the value of any fertilizer depends mainly on the per centage it contains of these three ingredients, viz.: (1) nitrogen, (2) phosphoric acid, (3) potash.

The other ingredients are required in such small proportion, or are of such little value, that they may be, and are generally, neglected in making a comparison of values.

NITROGEN.

The source of nitrogen, in commercial fertilizers, is either from Peruvian guano, from animal matter, in bones and refuse, obtained in large quantities from the Western markets, from fish, from the ammoniacal salts resulting from treating gas liquor with sulphuric acid, or it may be from the natural nitrates. Now, it must be understood that ammonia means the compound which consists of fourteen parts, by weight, of nitrogen, and three parts of hydrogen. So that when the amount of ammonia is given, we can find the amount of nitrogen, by remembering that in every seventeen parts of ammonia there are fourteen parts of nitrogen.

Prof. Johnson, after comparing the market price of different fertilizers with Peruvian guano, and the cost of the crude materials, adopts for his report of 1870, that nitrogen was worth, in the New York market, 30 cents per pound in currency. Col. Weld, of the American Agriculturist, in September, 1869, placed nitrogen at 23½ cents per pound. S. L. Goodall, Secretary of the Maine Board of Agriculture, in 1869, in his report, valued nitrogen at 42½ cents per pound. The average of these is 32 cents per pound.

PHOSPHORIC ACID.

The chief source of this ingredient is from bones. It occurs in the minerals coprolite,

phosphorite and apatite, and is found "diffused, though generally in small proportions, through all soils upon which plants will grow, for this substance is the essential constituent of the food of most plants, and especially of the cereal plants" [Bloxano.]

The bones of oxen contain about 57 per cent. of phosphate of lime. The vast deposit of phosphatic material, the remains of ancient animals, found near Charleston, South Carolina, furnishes an almost inexhaustible supply of this valuable and essential ingredient.

SOLUBLE PHOSPHORIC ACID.

In the form in which phosphoric acid occurs in a state of combination with lime, as in bones, it is known as bone phosphate, or to the chemist as ortho-phosphate or tribasic-phosphate. In this form it exists in bone flour or bone meal, and is comparatively insoluble in water. By treating this ground bone with diluted sulphuric acid (oil of vitriol) a portion of what was before insoluble in water, is rendered soluble, and is called now a superphosphate of lime, its value being largely increased.

The real value of a so-called superphosphate depends, chiefly, upon the amount of soluble phosphoric acid which it contains. But it is well to bear in mind that many are liable to be imposed upon by the manner in which a fertilizer may be advertised to contain such a per centage of soluble bone phosphate. It must not be understood that it contains an equal per centage of phosphoric acid, for it, in fact, will contain less than half as much phosphoric acid. Thus 20 per cent. of soluble bone phosphate (tricalcic phosphate) corresponds only to 9.17 per cent. of phosphoric acid.

Now, in regard to the commercial value of soluble phosphoric acid, Prof. Johnson places it in his report at 16½ cents per pound, currency, Mr. Weld, of the *Agriculturist*, at 14 cents, and Mr. Goodall, of Maine, as high as 25 cents per pound. The average of them is nearly 18½ cents per pound.

INSOLUBLE PHOSPHORIC ACID.

Phosphoric acid, as it exists in combination, (as before remarked,) is insoluble in water, or nearly so, and even when bones are treated with diluted sulphuric acid, a considerable proportion is still left in the insoluble form, and hence of less value. Dr. Augustus Voelcker, a distinguished analyst, in his report to the Royal Agricultural Society of England, in 1868, on the "Solubility of Phosphatic Materials," states that it requires from 14,000 to 32,000 parts of pure water to dissolve one part of pure tribasic

phosphate of lime. But when the water is not pure, but contains only one per cent. of ammoniacal salt, or chloride of ammonia, about ten times as much phosphate of lime is dissolved by the same amount of water. Dr. Voelcker sums up his conclusions as follows:

"For agricultural purposes, phosphatic minerals, as well as bone ash, should be treated with a quantity of sulphuric acid sufficient to convert the whole of the insoluble phosphates therein contained as completely as possible into soluble combinations."

It is a waste of good raw material to leave much of the insoluble phosphates unacted upon by acid.

Again: "*Insoluble phosphates present in a superphosphate, or similar artificial manure, have little or no practical value to the farmer.*"

Now, in regard to the commercial value of insoluble phosphoric acid, Mr. Weld states that bone dust, coarsely ground boiled bones, may be bought for \$30 per ton of 2,000 pounds. A ton contains, on an average, 450 pounds of insoluble phosphoric acid, and 60 pounds of ammonia. After deducting the value of the ammonia, it leaves the insoluble phosphoric acid at \$18, or 4 cents per pound. Prof. Johnson rates it at 6 cents per pound in 1870; S. M. Goodall, of Maine, also placed it at 6 cents per pound in 1869. The average of these is 5½ cents per pound.

POTASH.

There are two sources of potash—native and foreign. In regard to our native potashes, we quote again from the editor of the *Agriculturist*:

"Potash is so widely distributed that it has only a moderately high agricultural value. As a fertilizer it hardly exists in market, the pot ashes of commerce bearing too high a price for them to be used as a fertilizer. Good potashes are worth 7 cents per pound at wholesale; they contain not less than 75 per cent. of real potash, which would therefore cost about 9 cents per pound in this form. The available source of supply to the agriculturist is wood-ashes, and these contain other ingredients of value to the farmer, especially several per cent. of phosphoric acid. We learn from a gentleman of large commercial and practical experience that a bushel of "house ashes" weighs about 48 lbs. on an average, and that several potash makers who have boiled lye for many years, agree in the opinion that they do not yield more than about 4 pounds of potash to the bushel, which would be 3 pounds of pure alkali. These practical men agreed, within a pound or two, in regard to the average weight of the bushel. One was from Vermont, one from St. Lawrence Co., and one from Buffalo, and their experience covers a period of 70 years, down to one year ago.

"Ashes made in the open air weigh lighter, and hardwood ashes contain much more potash than those of soft wood. The price per bushel for ashes has varied a good deal, but at 12 cents per bushel, which has been and is a sort of standard price, we pay 4 cents per pound for the potash and get the phosphates thrown in. Allowing 4 cents per pound for the phosphoric acid, we can afford to pay as high as 20 cents per bushel for good ashes, if we cannot get them for less.

"A good analysis of a fertilizer will show clearly the relative quantities of the substances we have considered. A good analysis, then, is the indispensable thing, and buyers have need to know that the analysis is a correct one and should be guaranteed."

According to Prof. Johnson, commercial potashes are a mixture of hydrate, carbonate, muriate and sulphate of potash, with some soda, salts and sand in variable proportions.

The mines of Strassfurt, in Prussia, have, previous to the present European war, for some years furnished the foreign supply of potash. This bed of the salts of potash and magnesium is near Magdeburg, in the neighborhood of Strassfurt. It is 100 feet in thickness, and is immediately above a bed of rock-salt. It contains the sulphates and chlorides of potassium and sodium and magnesium.

"This is," says Prof. Miller, "precisely the position which it would occupy, supposing the deposit to have been found by the gradual drying up of an inland sea, when the common salt would crystallize out first, and the salts of potassium and magnesium afterward."

In regard to the cost of foreign potash in 1870, Prof. Johnson in his report says:

"The crude sulphate of potash, guaranteed to contain 10 to 12 per cent. of potash, costs at Strassfurt one-half thaler or 36 cents gold per 50 kilograms or 110 pounds avoirdupois. Potash in this form costs, therefore, at Strassfurt, 3½ cents per pound, currency (gold at 115). Cheaper for us, because requiring but 1-5 the freight, is the chloride of potassium which at a guaranteed content of 50 per cent. of potash, sells at Strassfurt for 2 5-6 thalers or \$2.04 gold per 110 pounds avoirdupois, which now corresponds to 4 3-10 cents currency per pound for potash. Last year this chloride of potassium was procurable for about \$3 gold per hundred in New York. At that rate the potash in it would now cost there about 7 cents per pound currency. Seven cents thus appears to be the cheapest rate at which potash is commercially procurable in a concentrated and soluble form in the fertilizer markets in Connecticut."

By reason of the war this supply cannot now be regarded as available at the same price. We may not be far wrong in placing potash at 9 cents per pound. As the crude muriate of

potash can now be bought in New York from 4 to 4½ cents per pound, and potashes are quoted from 6½ to 6¾ cents per pound.

SULPHATE OF LIME.

This ingredient, commonly known as plaster, or in the South as land plaster, is not generally considered in estimating the comparative value of fertilizers, but as it has been of such general use it may be not out of place to add a note in reference thereto.

In reference to its action, Liebig says: "Carbonate of ammonia and sulphate of lime (gypsum) cannot be brought together at common temperatures with mutual decomposition. The ammonia enters into combination with the sulphuric acid and the carbonic acid with the lime, forming compounds which are not volatile, and consequently destitute of all smell."

Again, the principle action of gypsum is ascribed by the same author to "the decomposition and fixation of the carbonate of ammonia contained in rain water."

Dr. Kane says, in reference to the action of plaster, "That acting on those substances of the ulmine family, which always retain a large quantity of ammonia intimately united in the soil, it forms, by double decomposition, ultimate of lime and sulphate of ammonia, which last being soluble is easily absorbed by the rootlets of the plants, and the nitrogen assimilated to its tissues."

But our notes were designed to refer more to the cost of this ingredient than to its supposed chemical action.

In 1870 it sold for \$17 50 in Baltimore, and to this had to be added enormous freight which increased greatly its cost. This was far above its real value as we will show.

Valuable plaster mines exist in Nova Scotia which constitute our chief source of supply. Besides these the mines of Southwestern Virginia also furnish large quantities.

Plaster in lump "can be had at the mines in Nova Scotia at from 90 cents to \$1 in gold per ton," so writes the President of a fertilizer company.

He further adds: "We have, however, found it to our interest to buy it in Boston at from \$3.25 to 4.00 per ton. Foreign vessels are not allowed the privilege of doing our coasting trade, without paying a heavy duty, and hence plaster is generally landed in Boston and re-shipped."

The best Nova Scotia ground plaster sells in Richmond, Va., at \$9 50 to \$10 per ton. Can one explain why it should command in Baltimore \$17 50?

From these facts it would seem that it would be made a profitable business to establish mills in Savannah and furnish ground plaster there at \$10 per ton.

There is another point worth noticing in manufacturing a superphosphate by the use of sulphuric acid and ground bones, the very process of which renders a portion of the phosphoric acid soluble, also converts a portion of the lime into plaster. So that we will generally find a large proportion of plaster in every superphosphate, produced naturally and not by any external additions. In some the plaster is as much as 40 per cent. It is obvious then, that if we considered plaster as one of the valuable ingredients we could not place it at more than three-fourths of a cent per pound, and hence in a comparison of values it may be disregarded.

To sum up our conclusions, we have found from the reports examined and quoted that we may, with probably small error, regard the following prices as correct for the Northern markets:

Nitrogen.....	32	cents per pound
Soluble phosphoric acid.....	18¼	" " "
Insoluble phosphoric acid.....	5½	" " "
Potash.....	9	" " "

Let us assume that these prices should be increased 15 per cent. to pay for freight, agents, manipulation, profit, etc., required to deliver the same in our Southern markets. This appears liberal enough. Neglecting fractions the prices would stand thus:

Nitrogen.....	37	cents per pound
Soluble phosphoric acid.....	21	" " "
Insoluble phosphoric acid.....	6	" " "
Potash.....	10	" " "

Nitrogen at 37 cents per pound, will place ammonia very nearly at 30 cents per pound.

Let us apply these prices to a free analysis. An analysis of superphosphate No. 1 in 1889, gave the following proportions:

Soluble phosphoric acid 11.11 per cent. at 21 cents.....	\$2 31
Insoluble phosphoric acid 1.15 per cent. at 6 cents.....	0 07
Nitrogen 2.71 per cent. at 37 cents.....	1 00

100 pounds would be worth.....\$3 38

Therefore the value of a ton would be \$67 60.

A fertilizer which we will call No. 2, gave the following proportions:

Soluble phosphoric acid 2.34 per cent. at 21 cents.....	\$0 49
Insoluble phosphoric acid 15.36 per cent. at 6 cents.....	0 92
Potash 3.43 per cent. at 10 cents.....	0 34
Nitrogen 2.15 per cent. at 37 cents.....	0 80

Value of 100 pounds.....\$2 55

Value of 1 ton.....\$51 00

Superphosphate No. 3 gave the following proportions:

Soluble phosphoric acid 6.01 per cent at 21 cents...	\$1 26
Insoluble phosphoric acid 8.21 per cent. at 6 cents...	0 50
Nitrogen 1.35 per cent. at 37 cents.....	0 50

Value of 100 pounds.....\$2 26

Value of 1 ton.....\$45 20

Superphosphate No. 4 gave:

Soluble phosphoric acid 8.12 per cent. at 21 cents...	\$1 70
Insoluble phosphoric acid 7.35 per cent. at 6 cents...	0 44
Nitrogen 2.84 per cent. at 37 cents.....	1 05

Value of 100 pounds.....\$3 19

Calculated value of 1 ton.....\$63 80

To show that the schedule of prices assumed is not too low, let us apply it to good Peruvian guano, such as was formerly obtained from the Chincha Islands before the supply was exhausted. It then furnished the cheapest and best source of ammonia, containing from 14 to 17 per cent. That now in market from "Guanape" is quite inferior, yielding only from 8 to 10 per cent. of ammonia.

According to Mr. Weld, good Peruvian gave the following proportions:

Ammonia 15 per cent. at 30 cents.....	\$4 50
Soluble phosphoric acid 3 per cent. at 21 cents.....	63
Insoluble phosphoric acid 12 per cent. at 6 cents.....	72
Potash 2 per cent. at 10 cents.....	20

Value of 100 pounds.....\$6 05

Calculated value of 1 ton.....\$121 00

We thus see at the same schedule of prices, the calculated value of good Peruvian guano (such as cannot now be obtained) is far in advance of what constituted the market rates. This should confirm us in the correctness and fairness of the method proposed of comparing values of manufactured fertilizers, by calculation upon the assumed schedule of prices.

And thus, this method could be applied to all the fertilizers sold in the Southern market, and a just comparison made of their commercial values.

It must be understood that the prices named for the valuable ingredients are assumed, and derived from considering the market value of a number of fertilizers, and of the raw materials of which they are composed.

It is not claimed that the calculated price is exactly what the fertilizer should sell for, while the assumed prices may not be correct, they cannot differ far from the truth, and at least serve admirably for a comparison of values.

Again, it must also be borne in mind, that the real value of an ingredient depends somewhat on its source. Thus one pound of nitrogen from Peruvian guano, dried blood or urea, is regarded as worth twice as much as a pound of nitrogen from coarse bone dust.

Also, in regard to phosphoric acid, Dr. Voelcker from careful experiments concludes that the different kinds of bone dust vary much in their solubility and practical efficacy as manures. For example, that bone dust made from solid bones, even when reduced to a fine powder, is less soluble in water than much coarser bone dust made from porous or spongy bones; that water dissolved much more phosphate of lime from rotten than from fresh bones, and that bone meal prepared by high pressure steam is far more efficacious and valuable than ordinary bone dust.

Hence, it is obvious that the nature of the materials from which the ingredients may have been obtained, should somewhat influence their calculated value.

As competition increases, and tends to fix at permanent rates the value of standard fertilizers, and our knowledge of facts grows, it is evident that we will be able to arrive at greater accuracy in our schedule of prices of the valuable ingredients contained in every concentrated fertilizer.

For the Southern Farm and Home.

The Best Sheep for the South.

MR. EDITOR—I am often asked by friends in different sections of our country, who know that I understand all about sheep, "what sheep are the best for the South." I find it somewhat hard to answer the question, but were I compelled to make a choice, I would certainly say the merinos, as combining more qualities to recommend them than any other. They do not make as fine or as large mutton as the Cotswolds or the Southdowns, but they make good meat, and the best wool, and then they are more easily kept than any other improved breed. A merino will get fat where a Southdown would starve. I have heard that these sheep may be bought now very cheap in the northwestern States; say from \$1 50 to \$2 per head. But I do not know this to be a fact.

The best way for a Southern man to obtain a good flock, is to buy some good native ewes in the spring, and thoroughbred merino bucks in the summer—one buck to every forty ewes. The ewes ought not to cost more than \$3 each, and the bucks can be had of the finest quality for from \$15 to \$20 each. In this way a fine flock of grade merinos could be had at a small outlay, which after a few years, by renewing the bucks, could be brought up to almost purebred merinos.

H. S.

BALDWIN COUNTY, GA., March, 1873.

For the Southern Farm and Home.

Stealing Laborers.

MR. EDITOR—I doubt very much whether Job, had he been a Southern planter in these reconstructed times, would have suffered as patiently as he did. He never was tried by free negroes, freedmen's bureaus, piebald legislatures, radical taxation, and the other plagues too numerous to mention, to which we have been exposed. I have borne boils myself and never murmured, but when it comes to a fine cotton crop in the grass, and all my hands gone to town to vote for some vagabond to pass laws for us, who is come among us for the express purpose of stealing what little we have left, my patience almost gives out, and I want to cry aloud. But I can stand even this, for I make allowance for the nature of the animal. It is where I find our own people—neighbors and so-called friends even—trying to seduce my laborers to leave my service, offering them higher wages, a larger share of the crop, more land for the women to work, &c., because they have been too lazy or too idle to procure their force of hands in time, taking the same trouble that I did—it is then I say that I give up altogether, and would like to take the law into my own hands.

This is by no means an uncommon practice. I have known hundreds of instances where men nominally respectable, who would kill any one who accused them of stealing, set to work deliberately by themselves and their agents, to seduce a neighbor's negroes to break their contract, leave their employer and engage to them. I know of one case where a planter visited his plantation unexpectedly and found a neighbor's wagons at his quarter getting ready to move a number of his hands. It is true he broke up the arrangement very quickly, and to hear him talk you would have thought he was very like an angry man, but the crime of the neighbor who tried to perpetrate the theft was not the less base.

There ought to be some summary process of law to enforce laborers to carry out their contracts, and to punish severely those who persuade them to violate them. The receiver is as bad as the thief. The briber is as bad as the bribed, (I do not allude to the Credit Mobilier) and the white man who persuades my laborer to quit my service to enter his, is quite as bad, nay, ten times worse than the negro who violates his contract. This infamous game is going on at this time on a large scale

in almost every State. No man goes to bed at night feeling perfectly sure that he will not wake up in the morning to find all his hands moved away to some other man's plantation. How is it any better than stealing, and the meanest kind of stealing? Any man who will do it would steal the spoons off your table, or the gold spectacles off an old lady's nose when she is asleep. There is no possible excuse for it.

Mr. Editor, you have done a great deal to protect the planter and assert his rights. Will you not stand up for him in this case, and "lash the rascals" who are guilty of this disgraceful conduct?

I caught an emissary from a distant country on my place not long ago, "hunting hands." I made him leave in a precipitate manner, feeling quite uncomfortable. I made him confess his object, and the name of his employer, who has since solemnly denied the charge, and I think that I am safe for some time to come. But the Philistines are abroad, and they should be slain.

H. B.

DESHA CO., ARK., March, 1873.

For the Southern Farm and Home.

Cultivation of Corn.

MR. EDITOR—One of the principal causes of poor crops of corn is neglect or delay in giving it the first workings. The hurry and anxiety to put in the cotton frequently cause the corn to be neglected until it receives an injury from which it never recovers. When the third and fourth blades appear, the plows should run round it, running as close as possible to the plants without covering them, and running as deeply as possible. The middles, too, should not be neglected. They should be plowed deeply, so that the lateral roots, which extend very rapidly, may find a loose and fine bed to feed in. As the plants grow, and as the roots extend, the plowings should become shallower and shallower, until a sweep should be the only implement used. The hoe force should immediately follow the plows, thinning to a stand, and drawing soft earth to the young plants, not leaving a single weed, blade of grass or superfluous plant, to rob the crop of a particle of the nutriment which belongs to the crop. The first working is the most important. Nothing should interfere to delay its thorough performance. If this were properly attended to, we should hear of fewer crops of five or six bushels to the acre, even on what we call our poor lands.

WHITE FLINT.

LOWNDES CO., MISS., March, 1873.

For the Southern Farm and Home.

How to Raise Lucerne.

MR. EDITOR—Although the agricultural papers of the South, with praiseworthy zeal, have impressed upon their readers, within the last few years, the value of lucerne as a forage crop, you would be astonished how many there are utterly ignorant about it. At a recent meeting of a farmers' club in my county, hearing several of those present speaking of the difficulty in procuring a sufficient supply of forage for stock, and of the expense of fodder, I spoke of lucerne, and found that very few knew anything about it, and still fewer knew how to raise it. The truth is, Mr. Editor, that you and your fellow-laborers, in the field of agricultural instruction, have a big work to perform. You must keep hammering away at one thing, when you know it is good, until people take your advice. You must be patient, and if one article does not wake us up to try something new and unknown to us, you must write two, three or a dozen. I regard lucerne as one of the best paying crops that I raise; but I do not know another man in my county who has ever raised a stalk of it.

It will grow well on any soil that will produce red clover. The seed, which are somewhat larger than clover, and if fresh and fully matured, can be bought from any good seedsman, [Our friends, R. G. Craig & Co., of this city, can furnish reliable seed.—ED. F. AND H.,] and six pounds of seed are sufficient to plant an acre in drills. I advise planting in drills, so that the crop may be cultivated and kept perfectly clean until it becomes fully established and takes possession of the ground. It shades the land as thoroughly as clover, and, with its large mass of roots, penetrates the soil to a great depth, making it light and porous. Once established, it will yield three or four heavy cuttings every year for several years, involving no outlay or labor after the first year, except an occasional top-dressing in the fall. The land, however, must be rich naturally, or must be made so artificially. Lucerne will not grow on poor or ill-cultivated land. The best time to sow it is in March, but it will do well if sown by the middle of April. One or two cleanings with a horse-hoe, unless the land be very foul, are sufficient cultivation. It does not exhaust the land, as might be supposed from its immense growth. It draws a large portion of its nourishment from the atmosphere, and its deeply-penetrating roots draw

moisture and food from the subsoil. The hay is equal, in my estimation, to the best clover hay, and is superior to it, in that it never causes horses to slobber.

MEDICAGO SATIVA.

For the Southern Farm and Home.

Negro Labor.

MR. EDITOR—I read many doleful letters, and hear many gloomy tales, about the worthlessness of negro labor; how idle, unreliable, vicious, and unprofitable the negroes are, and that if we cannot get white laborers to immigrate, we must quit or be ruined. I take a different view. I have employed a considerable laboring force every year since "freedom broke out," and I think I see plain signs of improvement each year. At first, when freedom was new and elections and voting had the charms of a toy to a child, and when there was a freedman's bureau at every cross-road, whose duty and delight it was to mislead and delude them, I had some trouble, and was rather dispirited as to the future, but I have comparatively little trouble now. I have no negro tenants. All my negroes are laborers, who work under my orders, or those of my managers, and, as I treat them fairly, pay them fully all that is due them, lodge them well and feed them abundantly, I get along very smoothly. The women, it is true, do not engage to work in the general crop, but they cultivate patches of their own of eight or nine acres—half corn half cotton—and do it well. The children do not stay about the houses doing nothing, or pretending to go to school. Their fathers are making them work, and make them behave themselves much better than they did.

I divide my force into squads of five or six, for the cultivation of my main crops of corn and cotton, making all hands join to cut my grain, repair my fences, and keep up the plantation. I allow them to keep cows, hogs and chickens, and to have a garden, and to give them plenty of room and avoid domestic dissensions, I scatter their dwellings, which I take care shall be comfortable and kept in good repair. Disobedience, idleness, dishonesty, neglect or insolence, I punish on the spot by dismissal. I do not play the fine gentleman living in a town and paying an occasional visit to my place. I live on it and attend to it closely.

I have trouble, of course. I am often sorely tried, but could I do better or as well with white laborers? I know I could not. If I

was reduced to white labor alone, I should not plant a seed of cotton again. I raise good crops, and I am satisfied that with all his imperfections, the *nigger* is infinitely the best field labor for the South. Look at the crops we have made since the war. Could we have made them with white labor? These reflections may perhaps cheer some of those who take such a gloomy view of the future, and induce them to inquire whether their failure to control their hands may not have been partly caused by their own negligence, or injudicious management. L.

DOUGHERTY COUNTY, GA., March, 1873.

For the Southern Farm and Home.

Farm Accounts.

MR. EDITOR—Allow me to suggest to the managers of our State fairs to offer a premium, and a large one, too, to the farmer who will show the best-kept set of farm books. It will pay a deal better than giving premiums for horse-races, and paying large sums to mount-banks and rope-dancers. We want improvement in this about as much as in any other respect in connection with our farming matters. Not one in twenty can do better than "reckon," "guess" or "allow" how many bushels of corn, wheat, oats, rye, barley or potatoes he makes in any year. The more accurate perhaps keep a tally on a stick on the sill of the crib or the storehouse door, but after a little they forget how to read the notches and know nothing of their meaning.

Every other business man knows to a cent what he makes and expends, and therefore knows exactly whether he is making or losing money. All we know, as a general thing—there are exceptions of course—is how many bales of cotton we make, and what they bring, but we cannot begin to tell how much it cost us to make the cotton.

Let the Agricultural Societies, which have done and are doing so much good, offer the premiums as I have suggested, and let competent judges examine the competing books. It is not the book that is written in the fairest and most elegant hand, or has the most nicely-formed figures, that is necessarily the best; but it is the book that shows the fullest and most accurate results. I value neatness as much as anybody, but what I am after now is the substance, not the form of farm accounts, by which our people may be taught to regulate their

business with the same precision and perfect knowledge as the merchant, banker, railroad manager or manufacturer manages his business. DR. & CR.

For the Southern Farm and Home.

Leached or Unleached Ashes—Which are the Best for Manure?

MR. EDITOR—Most farmers agree that ashes are a good manure, especially for grain and potatoes; but there is a division of opinion as to whether leached or unleached ashes are the more valuable. Many suppose that the unleached, containing all the potassa, which is extracted by leaching, are much stronger, and therefore more active as a manure. I think that this is a mistake, and that leached ashes, without taking into account the value of the lye in making soap, if exposed to the air and light for some months before they are applied to the land, thus absorbing from the atmosphere a large amount of nitrogen and oxygen, are one of the best and most profitable manures. I am satisfied that the nitrogen gathered by the leached ashes from the atmosphere much more than compensates for the insoluble potassa contained in the unleached, and lost by the leaching process. We all know that nitrogen is the most active and valuable property in any manure. No Southern farmer ought ever to buy a single ounce of soap. He is inexcusable if he does not make at home all the soap he needs; and I would go further, and recommend that soap-making for sale be made a leading industry among us. We have the wood in abundance, and indeed the wood which we now burn yearly on our plantations merely to get it out of the way of cultivation, all of which is entirely lost, would yield lye enough to make more soap than we could consume. Then, after having made our soap, we should gather all the ashes, and either apply them to our land by themselves, or compost them with land plaster, cotton seed, stable manure, woods-earth or swamp muck, and thus make a cheap and highly beneficial manure.

I have found that ashes are most effective on dry, light lands. They do not produce as good results on damp and stiff clay soils. I applied them liberally (leached) one year on a piece of newly-cleared land that I planted in sweet potatoes, and I raised over 750 bushels of fine potatoes to the acre. Applied to wheat in the spring, I believe they are a preventive of rust, although I cannot explain the why or the wherefore.

The best manure I know for an orchard or vineyard, is a compost of ground bone and ashes in about equal proportions, and as good a manure as any I know of for corn, is a mixture of leached ashes, land plaster and cotton seed—forty parts of ashes, forty of cotton seed and twenty of plaster.

Leached ashes, to be most valuable, must be left for some months exposed to the atmosphere, and should be occasionally sprinkled with water and the heap turned over. **SOFT SOAP.**

NEAR DOUBLE WELLS, GA., March, 1873.

For the Southern Farm and Home.

Improvement of Land.

MR. EDITOR—I am a constant reader of your valuable magazine, and have derived much instruction from it in many ways. I expect as long as I live, and am able, to subscribe for it; but there are some of the things you recommend which I regard as impracticable for the poor farmers of our country, who, you must know, are by far the greatest number.

When you advise us to keep a large number of stock to make manure, gather large heaps of lot manure and haul it out and spread it on our lands, as the best way to improve our lands, you give us advice which we can no more follow than if you were to advise us, as the best and readiest way to become rich, to go to New York, form a "syndicate," and propose to fund a portion of the government debt. We have no money to buy the stock; we have no money to build the necessary stables to shelter them, the necessary hands to take care of them, or the necessary appliances to save and gather the manure; nor have we the money to pay the labor that is requisite in teams and hands to haul it out and spread it upon the ground. It may do very well for Alderman Mechi, or for any other man with a long purse, to do these things. They have the money, and I admit that there is no better investment than to employ it as Mechi has done. But the class to which I belong has not got the money, nor can we raise it. It might benefit my health very much to travel in Europe in the summer, and I might learn a great deal by going to the Vienna exhibition, but if it were to save my life and that of all my family, I could not begin to find the money to do either. We poor farmers must look elsewhere for the means to improve our lands. God knows they need improvement, and a great deal of it. These means are, I believe, within our reach,

if we only have the energy and perseverance to employ them, and they consist in plowing under green crops for manure. This method is very cheap, is within the range of the poorest of us, and we have not to wait for the profit. It pays as it goes.

There is scarcely any land so poor that cannot be made remuneratively productive by this process. Plow it in August, manure it, if possible, with a few cotton seed, of which the germ is killed, so that they will not sprout, and sow it thickly in rye. During the winter, in dry weather, turn into this field whatever stock may be on the place. In spring, turn the rye under and sow cowpeas broadcast. When they have formed their fruit, plow them under and sow peas again, which should be again plowed under in time to sow wheat or oats, with clover in the fall, or if the land be too poor to produce clover, sow rye again for pasture, and repeat the sowing and plowing under the peas the second year, and in the fall it will be rich enough, I warrant, to produce a fine crop of clover. The fertilizing properties of clover are universally admitted, but the trouble is to get poor land in a condition to produce it. This can be done effectually by the cow-pea and a few bushels of land plaster, and both these articles can be had for a very little money. The rye pasture pays amply for the outlay, and the advantage to the land is permanent. We need practical advice, not theories. Now, this green manuring is eminently practical, and I would like to see you recommend it in the strongest way. It is the only chance to get poor farmers to take to clover. They see clover recommended; they purchase a few pounds of seed, (they cost like the mischief,) sow them on poor land, fail of course, and condemn clover as a humbug of the book farmers. If they would enrich the land with green manuring, and then try clover, they would bless the man who taught them such a ready and cheap mode of improving their land.

After we have renewed our lands thus, we can gradually buy the fine stock, build the fine barns, hire the skilled hands, make the big manure piles and haul them on our fields to maintain and even to increase their fertility; but now, when five to eight bushels of corn, or three hundred pounds seed cotton to the acre, is a "fair crop," how can we buy stock? It is all we can do to keep life and soul together. Yours,

POOR FARMER.

MORGAN Co., GA., March, 1873.

For the Southern Farm and Home.

Protection for Planters in the Purchase of Commercial Fertilizers.

MR. EDITOR—I agree with you fully that those of us who work poor land, and have not stable manure enough to enrich it, must use the commercial fertilizers. If we do not, planting will not pay for the labor. But we are sorely puzzled what commercial fertilizers to buy. If we follow the advertisement in the papers, so many of which are published at this season, all these fertilizers are first rate and will do wonders. But we have learned from sad experience that advertisements do not always tell the truth, and that there are many commercial manures offered for sale at high prices which are not worth hauling and spreading on the land if they were given for nothing. We have no means, even if we had the necessary knowledge, to ascertain their value by analysis. We are obliged to purchase blindly, and we only find out that an article is worthless when we find that we have wasted our time and money, and that our crop is not better than if we had not used any manure (?) at all.

We ought to have some protection in this matter. The State Legislatures should make provision to guard us against being swindled, just as they provide against false weights and measures, spurious flour, &c. Let a competent chemist be appointed for each State, whose duty it shall be to analyze every fertilizer offered for sale, and declare their comparative value. The system of inspection which has been tried in some of the States has proved entirely useless. In nine cases out of ten, the inspectors know nothing of chemistry, and are consequently incapable of judging whether a fertilizer is good or bad. They give a cursory examination, affix their brand, and deliver the planter over to the tender mercies of the manufacturers. But even were they competent, the system is defective. A manure may not be absolutely a fraud, but it may not be worth half the price at which it is sold. We want a guide as to which are good, better and best, as well as to which are good, bad and indifferent. This can only be supplied by an analysis of comparative value. Let samples of the manures be sent to a State analyst, who shall know nothing of the manufacturers, and have no contact with them. Let him receive them from the President or Secretary of the State Agricultural Society, who shall number the

samples, Nos. 1, 2, 3, 4, &c. Let him analyze them, and declare their comparative value, and return them to the officer of the agricultural society, who shall publish the names with the analysis. We will thus know what we are buying, and whether or not we are paying from \$60 to \$75 a ton for mixtures, a large proportion of which is worthless clay or sand. Fraudulent manufacturers will not dare to submit to such a test, and none but those who deal honestly will enter the market. As it is, we are cruelly swindled every year, and how can we help ourselves?

Yours,

GUANNER.

BARBOUR CO., ALA., March, 1873.

The Iron and Coal of Tennessee.

We take pleasure in publishing, at the request of several friends, the following able and interesting letter from Mr. George T. Lewis, as to the mineral resources of Tennessee. Although the facts thus presented are within the reach of all, they will startle a large portion of the population of the State by their novelty, so little attention do we pay to the immense treasures which lie under our feet, and which, if developed, would make this one of the richest States in the world:

S. D. Morgan, Esq., Nashville Tenn.:

DEAR SIR—Your esteemed favor is at hand. I am sure the information you desire in regard to the manufacture of iron in this State, could have been obtained more satisfactory to you from some other source, but as you know I am always ready to do what I can to advance the manufacturing interests of our people, I cheerfully respond to your inquiries by reiterating what I have said to you at your fireside, that "Tennessee, Georgia and Alabama," will become the "Wales of America" in the manufacture of iron, in consequence of the low cost of production. The section of country referred to abounds in hematite and fossil ores, bituminous coal and limestone, all of which enter into the manufacture of crude iron or pig metal. The ores yield from forty to sixty-five per cent. of metallic iron; the coals show by analysis from fifty-five to seventy per cent. of carbon, with less earthy matter and sulphur than the bituminous or "furnace coals" of England, Wales and Scotland, Western Pennsylvania and Ohio, while the limestone for flux cannot be surpassed. These rich mineral deposits lie directly upon railroads completed and being built, and can be made tributary to your city. Herewith I submit an estimate of the cost of one ton of pig metal, supposing the capacity of the furnace to be 6,000 tons per annum,

located near the beds of ore, coal and limestone, and to cost \$100,000:

Mining, loading and transportation of 2 tons ore.....	\$4 00
Mining, loading and transportation of 80 bus. coal ...	6 40
Quarrying, loading and transportation of 1,000 pounds limestone.....	50
Superintendence, labor, etc., per ton.....	4 00
Wear and tear, per ton.....	50
Interest on investment, per ton.....	1 00
Incidentals, per ton.....	50

\$16 95

* This item, \$4 per ton, embraces all the employees, viz.:

1 Superintendent.....	\$3,000 per annum.
1 Furnace manager.....	1,200 " "
1 Book-keeper.....	1,500 " "
1 Engineer.....	1,200 " "
1 Assistant engineer.....	800 " "
1 Blacksmith.....	1,260 " "
1 Assistant Blacksmith.....	600 " "
1 Pounder.....	1,200 " "
4 Fillers.....	2,400 " "
4 Keepers.....	2,400 " "
2 Guttermen.....	1,000 " "
2 Cindermen.....	1,000 " "
2 Welfghers.....	1,000 " "
6 Yardmen.....	3,000 " "
Extra labor.....	2,500 " "

\$24,000

Or \$4 per ton.

Annexed is a statement of the cost of one ton of pig metal in Ohio, when native ores are used:

Three tons of ore delivered at the furnace.....	\$12 00
Ninety bushels coal (only 50 per cent. of carbon)...	9 00
One ton limestone—(ores are lean and hard).....	2 00
Superintendence, labor, etc.....	4 00
Wear and tear.....	50
Interest on investment.....	1 00
Incidentals.....	50

Total.....\$29 00

The cost of a ton of pig metal made at Steubenville, Ohio, from Lake Superior ores, is.....\$29 00

The cost of a ton of pig metal made at Brazil, Northern Indiana, (the ores from Iron Mountain and Pilot Knob, Missouri, and Lake Superior,) is.....28 45

The cost of a ton of pig metal made at Pittsburg, the Birmingham of America, (ores from Lake Champlain and Lake Superior,) is.....29 50

Now, sir, I give you the estimated cost of one ton of pig metal in Nashville:

Mining, loading and transportation of 2 tons ore.....	\$6 00
Mining, loading and transportation of 80 bus. coal... 9 60	
Quarrying, loading and transportation of 1000 pounds limestone.....	1 00
Superintendence, labor, etc., per ton.....	4 00
Interest on investment, per ton.....	1 00
Wear and tear, per ton.....	50
Incidentals.....	50

Total.....\$22 60

But Nashville is not the *cheapest* point to make pig metal. It can be made on the Nashville and Chattanooga Railroad, and delivered in Nashville at a cost of \$19 per ton, which is \$10 50 per ton less than the cost in Pittsburg.

The great advantage we have is in the iron ore. Pittsburg, Steubenville, Brazil, in Indiana, and other points, have cheaper coal; but their ores being brought a long distance by lake and river navigation and railroad, with frequent handling, cost \$11 per ton, yielding 66 per cent. of metallic iron; consequently the ore alone, in a ton of pig metal, costs \$16.50. And in addition to this, it is legitimate to add the cost of carrying six months' stock of ore, because you are aware the lakes are open only

from about the first of May to the first of November. A furnace making 6,000 tons of metal per annum will consume 9,000 tons of ore, yielding 66 per cent. of iron. Six months' stock, amounting to 4,500 tons, at \$11 per ton, is \$49,500, the interest upon it about \$3,000, or 50 cents per ton of metal.

For comparison, I annex a table of the average samples of different coals used raw for reducing iron ores.

Name of Coal	Fixed Carbon.	Volatile Matter.	Ashes.	Sulphur.	Remarks.
England.....	54.89	39.70	4.52	1.50	Av. 25 mines.
Wales.....	57.70	26.96	4.91	1.43	Av. 36 mines.
Scotland.....	50.19	42.78	4.80	1.28	Av. 8 mines.
Pittsburg.....	54.80	37.00	8.20	Trace	.....
".....	53.00	33.07	13.83	Trace	.....
Ohio.....	58.95	39.02	2.03	.53	.....
Indiana.....	54.70	43.80	1.59	.00	.....
Newanee.....	63.00	30.34	6.66	Trace	.....
Ætna.....	65.00	32.50	2.50	Trace	.....
Coal Creek.....	55.00	40.00	5.00	Trace	.....
Sale Creek.....	58.75	40.75	2.50	Trace	.....
Battle Creek.....	59.50	38.20	2.50	.80	.....

I regret not being able to procure analysis of coals from the Cahawba and Warrior coal fields, but doubt not they are equal to those of Tennessee and North Georgia for smelting ores. There are some of our coals which are too rich in bitumen as they come from the mine for furnace use. They, however, make good coke, and that you know, is excellent fuel for reducing ores. It cannot be disputed that pig metal can be made in the section of country referred to at \$12 per ton less cost than in Western Pennsylvania, Ohio and Indiana. Then it follows that railroad bars, every description of iron and nails, can be manufactured at less cost. The conversion of pig metal into railroad bars and other descriptions of iron and nails will cost no more in your city than in Pittsburg, Steubenville or Cincinnati. Railroad companies are paying \$85 per ton for bars for roads now building, when the iron can be made directly upon their line of road at a cost of \$50 per ton.

Is it not patent to every one who has looked into the subject that cotton fabrics can be manufactured at a lower cost in the cotton fields of the South than in New England? And is it not equally clear that iron can be made at less cost where the ore and coal and limestone are in close proximity than at Pittsburg and other points where the ores and coals are separated by from five hundred to seven hundred miles?

The question naturally arises: Who will be the first to penetrate these lands, "whose stones are iron, and out of whose hills thou mayest dig brass;" whose mountains are filled with fuel, formed in nature's laboratory, to convert iron ores into metal essential to our prosperity? Will Nashville open these mines of coal and iron, and in connection with her cotton factories and other enterprises now contemplated, become the great manufacturing center of the Southwest? Or will she permit some future rival city to seize the glittering prize?

Very truly,

GEO. T. LEWIS.

Scientific Department.

Peat, Muck and Marl.

No three terms, common in agriculture, are so often misapplied as peat, muck and marl, and we might add that no three substances used as fertilizers are so often improperly applied to soils; at the same time no materials within reach of the farmer have so much value in them in proportion to their cost. The two first have similar characteristics, and are nearly identical in chemical composition, yet the substances so called may differ widely in physical nature, and in the manner in which they act. The two first may be said to be closely allied to the last in the fact that wherever possible they should be used together, and it is from such combination that the best results are obtained; and if marl be not attainable, it is always best as a general rule to use lime or gypsum in compost with the muck or peat. Such a compost can only be excelled for practical value and cheapness by the substitution of a good hard-wood ashes for the lime. If called upon to name the perfection of a fertilizer, we should say a compost consisting of a first-class article of muck and unleached hard-wood ashes. Next we would place the muck and New Jersey green sand marl, then muck and lime or ground plaster. The reason of our faith in these substances is that they contain more of the elements of plant food than any other fertilizers, and they are cheap, and some two or three of them may be found in every section of the country. Muck and peat are found everywhere that they are likely to be needed, and where there is not marl there is either lime or plaster. Hence no region but where farmers may avail themselves of some combination of these materials. In New England there are immense beds of muck and peat, and both lime and plaster are cheap; in New Jersey and south along the Atlantic seaboard are vast deposits of muck and beds of marl; in the West every State has either lime or plaster, and where peat does not exist, every swamp is ready to yield its tribute of muck, which has been for years in storing. The great elements of plant food are the alkalies, potash, soda and lime, silica and nitrogen. The muck or peat contains humic acid, which, by exposure to the air, is capable of forming nitrogen; it also contains some of the alkalies; the lime or marl contains them also, and the soil always holds silica. If the muck is put into the soil without lime, or marl, or ashes, it will act, but not so rapidly or so energetically; because it must be oxidized before the humic acid can undergo the chemical transformation which causes the generation of nitrogen, and because a portion of the humic acid will be called upon to aid in dissolving the silica. But, if in a compost with either of the alkaline matters, then the humic acid will be rapidly oxidized and produce ammonia, from which comes the nitrogen to feed the grain or fruit, while the alkali dissolves the silica to furnish the stalk or stem. Some

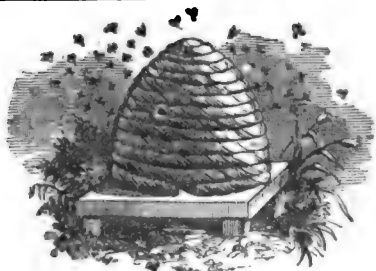
marls contain phosphoric acid, which, however, adding to their theoretical value, is not an absolute ingredient in our compost, as we know that vast crops of grain are constantly produced from soils to which no known quantity of phosphoric acid has ever been added. But we do know that, for the production of a good crop, potash or one other of the alkalies must either exist in or be added to the soil, and that, unless ammonia be present, the grain will not be produced. And as we have seen that muck, or peat and marl, or an alkali in some form, contain all these elements, that, aside from their cheapness, they are also, from their actual potential value, the best fertilizers for the farmer.

We are met, however, with the statement of the varied results from the use of those materials, especially the muck or peat. The cause rests chiefly in a want of care in the selection of the material used; all of the substances supposed to be muck or peat are not fit to be spread on the ground. These matters are the result of the decomposition of vegetable products, wood and grassy fiber and leaves, for ages in the presence of moisture; they have generally increased by growth and decay of matter on the surface or deposit from wash. In either case that deepest down is likely to be most decomposed and is best; no such material is of much value on land until it has decayed, and such change must take place in its bed, or if not already thus rotted, it must be so changed in a compost heap before being spread on the land. The mass of woody fiber which usually forms the surface-coat of peat beds is of but little more value, just as taken from the bed, to spread on soils, than so much sawdust. Wood itself, when decayed, is a fertilizer, but who would think of putting blocks of solid wood on his land; yet many farmers haul out on their lands loads of little fibrous undecomposed roots, and then complain that muck is of no value.

We cannot ask more of the vegetable matter which is yielding its life to decay for our uses, as fast as the laws of nature will permit. We can hurry up the work in but one way, by burning and using the ashes, and then we lose the ammonia. Hence, in selecting muck or peat, we should go below the surface, and if we find not there the waxy decomposed material which will not disappoint our hopes, then we have only to leave that bed for future ages, a mine of wealth for those to come after us, and turn our attention to other beds, or to other sources of procuring the fertilizing material which nature has not so generously provided us as she has some of our neighbors.

THE VALUE OF PLASTER.—A quart or two of plaster a day will keep a large horse stable comparatively sweet; and a few bushels will absorb the ammonia from a large pile of fermenting manure. As a deodorizer, plaster is next to carbolic acid in efficiency. It should always be handy in the stable, pig-pen and yard, and the instant any unpleasant odor arises, should be used liberally.

The Apiary.



Developing a Peaceable Disposition.

At the last session of the North American Bee-Keepers' Association, an interesting discussion ensued upon the question submitted by Mr. Quinby: "Will the right management of bees develop peacefulness of disposition, as we know wrong management develops the opposite?"

Dr. Bohrer, of Indiana, said he had handled bees roughly without irritating them, and without keeping them peaceful. He considered that bees had fixed habits, and that they acted wholly on the defensive. In one instance he had for six days handled a colony of bees continually without their showing any anger. On the seventh he opened them with confidence, but they resented it, and not one, but all of them flew at him, and he was not aware of doing anything unusual, or that should have irritated them.

Dr. Lucas, of Illinois, differed with Dr. Bohrer. Had seen one Brooks of Illinois, exhibit bees that he was satisfied were tamed. He carried them about to fairs for weeks and opened and handled them with impunity. He had handled them himself for Brooks, when he was disabled, and found them to be as quiet as desirable. Tried his own uneducated bees and failed. Thought that they could be taught to recognize their keeper by scent.

Mrs. Tupper, of Iowa, thought that the members misunderstood the question of Mr. Quinby. She understood the question to apply to the improvement of the race, and not educating single colonies. Bees at fairs are not in a normal condition, and consequently do not act normally. To teach bees in an apiary to know their owner, would require constant teaching, as young bees were constantly taking the place of the old ones. Thought they did know the way they were handled and managed, not that they know strangers, but that strangers are careless or ignorant of how to act with them. Dr. Bohrer no doubt, acted carelessly on the seventh day, having too much confidence. Some bees are cross, where others are the opposite, under apparently the same circumstances. If we would give more attention to the selection of queens to breed from, that produced good tempered bees, great improvements might be made in that respect.

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Mr. Zimmerman asked: does opening a hive often make the bees more quiet?

Mrs. Tupper replied that it does.

W. B. King, of Kentucky, thought that the scent of crushed bees would induce anger.

Aaron Benedict, of Ohio, said damp rainy weather had an influence in making bees irritable.

T. J. Pope, of Iowa, had a hive that he opened five or six times a day for some time, and always found the bees peaceable, but letting them alone for several days, they showed rage when he attempted it.

Mr. Moon said all bees could be irritated, but dealt gently with them and they will deal gently with you.

H. A. King, of New York, thought that bees should be thoroughly subdued. If so there would be no irritability.

Mr. Homer, of Minnesota, said bees can be domesticated. Had bees that set by a path that became so accustomed to passers that they never tried to sting. Believed that they could be familiarized and accustomed to being handled, so that they would be perfectly peaceable.

Dr. Hamlin gave experience with bees placed on a path near a gate that was used and slammed repeatedly during the day, and thought they became accustomed to it, and did not mind it.

Mr. Pettridge, of Iowa, had bees in Huber Leaf Hive, which he set in his porch, which soon became so tame that they bothered no one.

President Clark thought Mrs. Tupper correct in the construction she put on the question. It was an interesting subject. It was perhaps more so to him than others, from the fact that he was bee hated. Why should we not improve them? While there was evidently a difference in the temper of the same varieties of bees, it was also found that they had their bad moods. They are not always alike—amiable. Like men, some you can approach at all times with confidence, others you have to find out their moods first. A mother may produce a quiet progeny, while queens from her may have vicious offspring. As a rule it does not take as much to arouse the black as the Italian bees.

The Queen Bee.

When the queen bee is forcibly taken away from the hive, the bees which are near her at the time do not appear sensible of her absence and the labors of the hive are carried on as usual for a time. It is seldom before the lapse of an hour that the working bees begin to manifest any symptom of uneasiness. They are then observed to quit the larvæ which they had been feeding, and to run about in great agitation to and fro; and on meeting with such of their companions as are not yet aware of the disaster which has befallen them, communicate the intelligence by crossing their antennæ and striking lightly with them. The bees which receive the news become in their turn agitated, and spread the alarm further. All the inhabitants now rush forward, eagerly seeking their lost queen. But finding search



useless, they appear to become resigned to their misfortune, the tumult subsides, and if there are worker eggs or young larvæ in the cells, preparations are made to supply the loss by raising a new queen, and the usual labors of the hive are resumed.—*American Bee Journal.*

The Best Bee-Hive.

At the Bee-Keepers' Convention, held at Kalamazoo, during the Michigan State Fair, the above question was submitted to a committee, who reported that the best bee-hive was one with a broad chamber not exceeding twelve inches or less than ten inches in depth, and to be of such a form that it contains not less than two thousand, and not to exceed two thousand five hundred cubic inches of space; and that surplus honey space above be of the same size, in order to use the same sized frames, or small honey boxes with frames. That the entrance should be small in winter, allowing not more than two bees to pass each other at a time, and the ventilation upward to be regulated at pleasure, as no strong current of air should pass up through the hive, that being highly injurious to the bees.—*Exchange.*

Is Bee-keeping Profitable?

It is an occupation more suited to ladies than gentlemen. As to profit, Mrs. Tupper said at the late Bee Convention, that she met a farmer and his wife coming from town. He had sold four loads of corn for \$12, and she had \$25, the proceeds of three hives. Women can make it successful where men cannot. It will pay in suburban homes, and on the house-tops of cities.—*A. G. Murray, in Rural Southerner.*

"HOW FAR HAVE ITALIAN BEES BEEN KNOWN TO FLY BEFORE SETTLING?"—Mrs. Tupper—A man found a swarm eight miles from my apiary. As mine were the only ones in the county, and a swarm left me that day, they were undoubtedly from my apiary.

Adair—Am satisfied a swarm left my apiary and alighted fourteen or fifteen miles distant.

A gentleman from Sandusky, Ohio, stated that a swarm of bees came to him from Kelly's Island across Sandusky bay, seventeen miles; and black bees have appeared on the island that could only have come from the main land. *Report of American Bee-Keepers' Convention.*

The Stock Yard.

Training the Horse.

There is probably no one thing that more people are conceited about than the matter of handling horses.

Our lady friend will tell us she can drive a horse, for while she was out in the country, she drove the hay-cart to the field twice!

Pat can drive, for he "*follid a horse in the ould country above five years.*"

Old Jehu can surely drive, for he was brought up among horses.

John Bull knows all about 'orses, for he has seen the "big 'uns in Liverpool," while Snob has proved his skill by passing every one on the Brighton and Bloomington roads; time 2:30. But a majority of the self-sufficient ones would come nearer the truth to use the language of poor Pat, who, on being questioned as to his ability, replied: "*Pis, faith, I can drive him jist wherever he has a mind to go.*"

It is more owing to the natural intelligence of horses than to the judgment and care of the driver, that serious accidents are not more frequent.

How few horses comparatively can be trusted out of reach, or left unhitched for a moment? How few will stand for persons to get in or out of the carriage, or can be driven within twenty rods of a suspicious object, with safety?

How many are unreliable, not to say *entirely unmanageable*, in case any part of the harness or carriage gives way on the road?

How many horses perfectly able to draw a ton anywhere, cannot be relied on to try a second time on half that weight, in a bad spot? How many will not back an empty wagon? and all these faults are often owing to the stupidity and negligence of the driver, rather than to any particular trait of the horse's disposition.

My idea of a properly-trained horse is one that will lead without straightening the halter, stand quietly to be cleaned or harnessed, wait for the whole family to get into the carriage, start off gently on a *loose rein* with the mercury at zero, stop at the word under almost any circumstances, stand unhitched for a few minutes *at least, almost anywhere.* One that can be safely driven as near as is ever necessary to a

locomotive or any other suspicious object, and be relied on to do his best to draw or back a load in any spot as often as is necessary.—*Massachusetts Ploughman*.

Broken Wind in Horses.

The treatment of broken wind can seldom be more than palliative. Whatever increases the distension of the stomach and bowels, aggravates the complaint by increasing the difficulty of expanding the lungs. Therefore, avoid stimulants, and promote regular evacuations. Abstain from over-distension of the lungs by too violent and too sudden exertions, particularly after eating. The food should be regularly given in moderate quantities only; but most particularly it should be of such a nature as will contain much nutriment in small space. Hence corn is more proper than hay, and, above all, a manger food composed of one part bran, one part bruised corn, and two parts bruised oats, agree particularly well, if given somewhat moistened. On a quantity of this food no horse will need hay. When they can be got, give also carrots, mangel wurtzel, Swedish turnips, parsnips, or cooked potatoes, which feeding will be found to combine both medicine and nutriment, and render little water necessary. Turning a horse to grass commonly aggravates broken wind; and a neglect of moderate exercise also aggravates the complaint. Water should be sparingly given, particularly in the working hours; at night a moderate quantity should be allowed, but on no account let the broken-winded horse drink his fill at a pond or trough. As such a horse generally is a gross feeder, a muzzle ought to be put on as soon as the manger has been emptied, that he may not devour his bedding.—*Prairie Farmer*.

To Prevent Cattle Jumping.

A correspondent of the *Vermont Farmer* thus describes an improved poke or jumping-stick: First put a piece across the horns. Then have a piece of hard-wood board, one-half or three-fourths inch thick, and about three feet long. Have a hole inserted in the bar across the horns in such a way that when this hard-wood strip is inserted in it, running out over the back, as the animal naturally carries its head, the rear end will be just free of the back. Drive three or four shingle nails, ground sharp, into this end, letting them come through three-fourths of an inch, so that as soon as the animal makes an effort to raise his head to jump the fence, the nails will soundly prick his back, and he will be apt to frisk his tail and start for some feed that is easier to be obtained. For cheapness and durability this arrangement is unequalled. It weighs less than three pounds; it is not in the way in traveling around, and when the animal lies down it is on one side, as it is natural for the animal to throw its head opposite to the side it lies on. When they are feeding, it is upright in the air. It will keep the animal to which it is applied where he belongs, sure.

Best Time to Castrate Animals.

Young pigs, lambs and calves may be castrated almost any time with perfect safety. Many persons hold to the opinion that cold weather is the most suitable time to castrate colts and aged animals. My experience and observation is that May and September are the most suitable times. In May there are no flies or other insects to torment the animal; and also, the weather not being hot, the animal does not resort to the shade. Consequently keeping out in the open field it is natural it will pick grass and keep in moderate exercise, an animal will swell less than if it remains too much of the time stationary under the shade. The same reason applies to September. If done in cold weather the animal will be apt to be kept housed, which should never be done.—*Am. Stock Journal*.

Does it Pay to Raise Big Hogs?

Being a young farmer, I want to know if it is profitable to produce hogs of above 300 pounds weight, or does it pay better to put them into market, or the pork barrel, under the above weight? This is the way the case looks to my mind:

In order to get hogs to weigh above 300 lbs., it is generally necessary to keep them until near two years old, and have to feed them two winters, while an animal not much over one year old, can be brought up to 275 lbs., or over, and will have to be wintered only one winter; in itself a considerable item, the winter feeding of swine being more expensive than their summer pasturing. I question if one hundred pounds of pork additional, will pay for keeping an animal requiring as much food as the hog requires, for one year.

I know that heavy pork does not sell as readily in our markets as hogs weighing two hundred pounds or less; and the lighter animals sometimes command one dollar more per hundred weight. Heavy pork is generally harder to cure, there being more difficulty in getting the salt to penetrate to the center of pieces, than in hogs of smaller size. There is more waste, too, in the larger animal, in the way of trimmings.

I will consider myself under obligations to any of your numerous correspondents, who will be so kind as to give us some reliable data on this important subject, and I presume that many others are as anxious to know more of this matter of raising "big hogs."—H. C. EVANS, in *Journal of the Farm*.

CHOKED CATTLE.—To relieve a choked ox or cow, give at once one-half pint melted hog's lard, and exercise the animal. It sickens the stomach, and the obstruction will pass immediately either up or down, as the animal will cough and swallow at once, and thus get relief. Put the warm lard in a junk bottle and raise the animal's head—it will run down easy. This is the surest and safest remedy known, and never fails if administered soon after the accident occurs.

Breeding Sheep too Young.

Ewes should not be permitted to breed at one year. The lambs of such young mothers will be of little use, always small, puny and unprofitable, and the mother will not grow much afterward. Besides, there is no profit in this early breeding, for the first fleece will be so much less and the young ewe of so much less value, as to quite overbalance the gain in the lamb. The ewe should not breed at less than two years old, and she should be fed most liberally the first winter to keep up that healthy growth made the first summer on her mother's milk and good pasture. Green food seems even more necessary for sheep than cattle. Therefore a small quantity of turnips, beets, carrots or potatoes should be provided for lambs. Let the young ewes be healthy and strong, and the lambs will be like them, and sell at high figures to the butcher. But early lambs always sell best, and sheep breeders should provide such warm quarters that lambs may be safely dropped in February.

Boiled Corn for Hogs.

I experimented five years in fattening hogs, three with meal well scalded and cooked before feeding, the other two in feeding corn boiled. I shelled the corn from the cob, and boiled it slowly in a boiler, and fed eight quarts per hog daily, keeping the boiler well covered all the time, so as to have all the heat possible. The hogs that I fed with boiled corn fattened fully one-fourth faster than with meal, and the pork was well packed with leaf lard and was solid and delicious enough for the most fastidious.

One of my neighbors has fattened his hogs for several years past on dry meal, giving two quarts to each hog three times a day; for drink, he gives them cold water. He claims this to be the cheapest and best way. Certainly there are no better than he raises, for their age, and no cleaner, handsomer pork.—*Cor. The People.*

A CURE FOR HOG CHOLERA.—A correspondent of the *Cincinnati Gazette* gives the following as a cure for the hog cholera: Take peach leaves and make a tea as strong as you well can. Thicken this tea with cornmeal or bran, then salt it, and give it to the hogs. There should be about two bucketsful for forty hogs. It will make them sick sometimes; but we have tried it when the hogs would only take a mouthful, then walk away; but when driven back they would eat some more. All that eat it will get well; and they will eat this, too, when they will not eat corn at all. In the winter, peach tree twigs can be used to make the tea with, in the absence of peach leaves.

SCRATCHES.—Having a pair of horses badly affected with scratches on hind feet, I tried the remedy recommended in your paper some months since; first cleansed the parts affected, with castile soap, and then took carbolic acid, reduced with twenty parts of water to one of acid, and applied with a sponge,

covered the heel with a dry bandage. Three applications produced a perfectly satisfactory cure. Shortly afterward I advised this application for a neighbor's horse, and it worked in an equally satisfactory manner. In the last case the odor was quite offensive from the diseased part, and the carbolic acid corrected this at once.—*T. W., in Live Stock Journal.*

The Price of Tigers.

It may interest persons who think of buying tigers to learn that a couple were sold in Alabama a few days ago by a circus company for six thousand dollars. We have never shopped much for tigers ourselves, but this seems to us to be cheap. The fairest way to estimate such value is to reflect what you yourself would be willing to supply the article for. Now there may be a difference of opinion among our readers upon the subject; but we hardly think we should be willing to go out to India, to tramp around in the jungles, seize the first two tigers that passed, and to lead them home here with a string, for any such sum as six thousand dollars! Not that we mind the trouble of going to India, or the expense of string; but we object to that excessive and demonstrative sociability which makes some tigers so disagreeable. With a stuffed tiger it is different, of course, for then there is usually more docility and less enthusiasm. We can stand for hours by the side of a stuffed tiger without the quiver of a muscle or a feeling of homesickness. Persons who want a tiger or two around the house to amuse the children, will find this kind not only tamer but less expensive. They do not eat so much, for one thing, and are not so apt to thin out the family and to lunch on the hired girl. To us, however, this latter qualification would not be an inducement. Show us a tiger that has contracted a habit of assimilating hired girls, and we will have him at any price that can be borrowed of our friends.—*Exchange.*

New Sources for the Supplies of Potash.

There has never been a time when soil cultivation as a pursuit was more hopeful and promising than the present. We have just learned the important fact that an abundance of plant food has been stored up for our use in mines and rocks, and that we have only to reach out our hands and take all that we require. Ten years ago, who could even have dreamed of such vast deposits of potash as have been opened up to us at the Stassfurth salt works in Germany. Some idea of the supply may be formed from the fact that at the present time, more potash is furnished from these mines than from the wood-ash sources of the whole world. About 13,000 tons of potash were sent to market from the United States and British America in 1870, and yet at Stassfurth, where a dozen years ago it was not supposed that a single ton could be procured, 30,000 tons of the muriate of potash were manufactured and supplied to consumers upon both continents during the past year.—*Boston Journal of Chemistry.*

The Poultry Yard.

Caponizing.

The process of caponizing is resorted to in order to increase the value of fowls for the table. In the cock that has received its natural development, a large part of the material supplied as food is diverted from nutrition to serving the purposes of reproduction, always an expensive process. Not only is there absolute loss in this way, but also the bird is nervous, unquiet, quarrelsome, all conditions that tend to retard increase in size, while active muscular exertion hardens the flesh. A caponized cock loses the distinctive qualities of his sex, becomes quiet and pacific, and increases in size, continuing to grow larger than the un-mutilated bird, while the flesh is superb, becoming very finely flavored and tender. Capons also need less food than other fowls to produce the same weight.

Objection has been made to the operation on the score of cruelty. It is hardly necessary to refute this objection, while the same operation is so universally practiced upon a much higher order of animals—horses, cattle and swine. But it is to be remembered that at the age at which it is performed, the organs amputated have not yet obtained sufficient development to make the operation so painful as in the adult fowl, while mental disquiet is not to be thought of in connection with animals, since the state of the case is not understood by the subject of the operation.

The operation is easy and soon learned. The instruments needed are as follows: a tube with a flattened end, from which projects a horse hair loop, the other two ends being tied together, making another projecting loop, large enough for two fingers; a steel rod with a sharp hook at one end and a spoon at the other, a knife, (and an ordinary pocket knife answers all purposes,) a pair of tweezers, and a steel splint with a broad flat hook at each end.

Previous to the operation the bird should be kept without food or drink for thirty-six hours, so that the intestine may be empty and the parts easy to find. The best age is three or four months.

FINDING THE TESTIS.

At a point near the junction of the thigh and body, in a line from the thigh to the shoulder, clear away the feathers from a spot two inches across, and make a cut an inch and a half long through the skin and belly down to the intestine, taking care beforehand to draw the skin to one side. The cut is to be made between and in a line with the last two ribs. The intestine must not be cut. Separate the ribs by attaching to each one of the hooks on the steel splint; this will expand and spread the ribs apart. Push the guts out of the way with any smooth thing that will not injure them, and the testis will be found attached to the back.

REMOVING THE TESTIS.

When found, they will be seen covered with a membrane which must be picked up and torn open with the hook. Put the horse hair loop around the attachments of the testis, and pulling on the ends with a sawing motion by rolling the wrist, the parts will come away; care must be taken not to cut the large blood-vessels. Take out the testis and all the blood with the spoon, close the wound, let the skin slip back to its place, and twist together the feathers on each side of the incision, wetting them first with blood.

AFTER-TREATMENT.

No bandages or stitches are necessary. Feed with soft, cooked food in small quantities, and give plenty of water.

Six to eight per cent. will die by bleeding, but can be eaten as well as if beheaded.

Caponizing is already much practiced in America, and is found to be a profitable business.—*Live Stock Journal*.

Condiments in Poultry Diet.

Cayenne pepper, mustard or ginger, can, with great benefit, be added to the food of fowls, to increase their vigor, and to stimulate egg production.

This apparently artificial diet will be seen to be natural if we remember that wild birds of the gallinaceous species get access to very many highly-spiced berries and buds; articles that give the "game flavor" to their flesh. The ordinary food of the domestic fowl, is not, indeed, entirely without some addition, since there is more or less of an aromatic principle in wheat, Indian corn and all other grains. Nevertheless, it is not sufficient in quantity to supply the place of the stronger spices, a taste for which is part of the fowl's inherited constitution. A moderate quantity of cayenne, etc., added to the ground grain is always productive of health and thrift in poultry.—*The Poultry World*.

Feeding for Eggs.

A writer in the *Working Farmer* gives the following advice, to which we invite the attention of our readers:

Hens cannot produce eggs unless their food contains the elements of which the egg is composed. The kind of feed that is offered to hens must be determined by the object to be obtained in feeding them. Hens intended for the market should be fed on that kind of grain which is known to contain a large per centage of the fatty or oily substances. But hens kept as layers should be fed on that kind of grain which contains a larger share of the albumoids of egg-producing elements.

In addition to the essential quality of albumen required in the organism of the fowl, the laying hen requires an extra amount for ovulation—the white of the hen's eggs being about twelve per cent. of albumen—and this must be

furnished in her feed. By referring to a chemical analysis of the different cereals, it will be seen that corn contains the greatest amount of fatty substances, while wheat contains a larger amount of albumen than any other cereal. To fatten hens, therefore, feed corn. To procure eggs feed wheat. Meat once a day in winter will prove beneficial to laying hens.

I allow my hens to have free access to troughs always kept well filled with wheat screening from the mill. If allowed to choose their own time for eating, hens will eat often and but little at a time—never too much. Chickens should be furnished with plenty of limestone gravel. Some say pure water is essential to laying hens; I prefer to give them milk, as that fluid not only serves to moisten their food, but also contributes albumen, which goes to the formation of the egg.

Gapes in Chickens.

W. B. Tegetmeier writes to the *London Field*: "The fatal disease caused by the presence of the gape worm, appears unusually prevalent. I have had it in my own runs, where it has attacked some Sebright bantams; but I have found no difficulty in curing it by the means of carbolic acid, which I first recommended for this purpose in the *Field* of last year. So potent are the fumes of this powerful remedy, and so destructive are they to parasitic life, that their inhalation for even a few moments seems perfectly effectual in destroying the life of the worm. It is not even necessary to employ any special apparatus; a few drops of carbolic acid may be placed in a spoon and held over the flame of a candle until the vapor is seen to rise. When the head of a young chicken or pheasant (held in the other hand) may be placed in the vapor, which the animal is forced to inhale. Care must be taken not to carry on the process until the fowl as well as the worms are killed. I find after exposure to the fumes for a few seconds the bird may be regarded as cured, and may be seen running about quite well on the following day; if not the treatment should be repeated. The medicinal carbolic acid is preferable to the tarry liquid used for disinfecting sewers and drains.

Silver Pencilled Hamburgs.

There are few breeds of fowls more beautiful than the Hamburg in all its varieties, and our admiration of the breed is much increased by knowing its economical qualities. The strange, artificial characteristic of non-sitting gives to this breed its value; the hens lay steadily throughout nearly the whole year, and only in the most exceptional cases are interrupted by the impulse to incubation.

Fowls of this breed are of only medium size, but their deficiency in size is more than made up for by their fertility, and, as the markets run, a small egg is more profitable to the seller than a large one. Besides, a larger

proportion than usual of the weight of the dressed bird is flesh, from the delicate structure of the skeleton, and is fine in quality.

Perhaps the most beautifully marked variety of this breed is the Silver Pencilled, although in certain economical qualities it is possibly inferior to the Spangled.

The difference in the marking, by the way, is as follows: A spangled feather has a spot on the end, while a pencilled feather is marked with transverse bars.

It is doubtful whether the Pencilled variety is as hardy as the other; it certainly requires more care, and is much more likely to be attacked by roup. As to prolificness, they lay fewer eggs than the Black, and smaller ones than the Spangled Hamburgs. Nevertheless, they will always be favorites with the public.—*Exchange*.

What Fowls to Keep.

A Committee appointed by the Farmers' Club of New York to visit the poultry show, and report what breed of poultry to keep, made a report to the Club, of which the following is the substance:

What breeds are at present most prized? Answer—Different breeders disagree, but it is at present thought that the majority prefer the Houdans, dark and light Brahmas, and Leghorns.

Are pure breeds preferable? A.—The pure breeds are better than half-breeds, as layers, but not quite so hardy.

What fowls are best layers? A.—White Leghorns and Aylesbury ducks.

Which grow fastest and make most dressed meat? A.—Creve Cœurs, light and dark Brahmas, and Aylesbury ducks.

For eggs and flesh both, which are the best? A.—Houdans.

For flavor and tenderness of flesh, which breeds excel? A.—Houdans, Dorking or Game, and Rouen ducks.

For mothers, which have you found best? A.—Game and Dorking.

Is the Dorking hardy in climate? A.—No.

What feeding and range do you recommend? A.—Ground feed in the morning, mixed with warm water, whole grain at night, a little meat occasionally in the winter, with some broken oyster shells, all the range possible, and a good warm house, are all that is necessary.

What is your opinion of poultry raising on a large scale. A.—It can be done with great profit if the ground and houses are large enough. Every hundred fowls should have at least an acre.

A writer has compared friendship to our shadows, and a better comparison was never made; for while we walk in the sunshine it sticks to us, but the moment we enter the shade it deserts us.



The Vegetable Garden.

After the first week in April there is not much to fear from frost in any part of the Southern States. In Louisiana, Florida, Mississippi, Texas, Southern Alabama and South Georgia, "all danger of frost is past" long since, and even in the more northern latitudes, except in extraordinary cases, frosts are not much to be dreaded now. We may, therefore, set to work with all our might in our gardens, planting snap and pole-beans, planting out from the hot-bed tomatoes, egg-plants, peppers, &c., transplanting cabbage, cauliflower and lettuce, planting melons, squashes and cucumbers, and putting in English peas, sweet corn, okra, radishes, &c., for a succession. In planting melons and cucumbers, give plenty of space between the hills, and do not plant more than three or at most four seeds in a hill. Thin out beets, turnips, celery, parsnips, carrots and onions, raised from seed, and indeed all vegetables when they have attained sufficient growth, so as to leave them plenty of room to expand and mature.

Do not wait for a rainy day to transplant cabbages. Make a paste, not too thick, of cow-manure, water and woods-earth, dip the roots of the plants in it when they are taken from the seed-bed, and plant them out in the evening, just before sunset. This is the time to hunt for the cut-worm among the cabbages. A mixture of salt and soot, or a little guano applied close to the stem, will keep him off. If this fails, look for him till you find him, and then—for he is eminently disloyal—"kill him on the spot." It is also a good preventive

to dust the young plants, while the dew is on them, with soot or ashes.

Keep the hoes going actively, extirpating weeds, loosening and stirring the soil, and preventing any unwelcome plant from robbing the vegetables of a particle of the food provided for them. Be particular to thin the plants severely. An abundance of room is essential to healthy vegetable growth. Save all the ashes from the house, the hen droppings, and the soap-suds, to top-dress the growing crops in the garden. A fowl-house, containing fifteen or twenty fowl, will supply manure enough, when mixed with the ashes and the suds from the laundry, to enrich a garden as liberally as would a ton of the best commercial fertilizer, costing \$75 cash, or \$85 "on time, with factors' acceptance," which costs a little something like 2½ per cent. "for advances." Take care, in planting melons, cucumbers and squashes, to keep them widely separate. When near they destroy the distinctive qualities of each other. In dry weather, help nature with the watering-pot, and if a little guano is mixed with the water, so much the better, but it must be a very little, only enough to make a weak solution.

The Flower Garden.

We hope that our fair readers have taken the advice which we have frequently given them, and have provided themselves with a nice collection of flower seeds, starting the tender varieties under glass, and thus having plenty of plants to plant out now. If you have not, you can now sow the seed where you wish them to grow and remain, being



GROUP OF PANSIES.

careful, as already recommended, to sow them in finely-prepared soil, and not to cover them too deep. You can now plant out, with impunity, verbenas and all "bedding plants" where you intend them to bloom. Plant out dahlias, separate and transplant hollyhocks. Finish planting evergreens and shrubs. Sow a plenty of mignonette close to the house. It keeps in bloom all the summer, and its fragrance is unsurpassed. Water the roses with weak guano-water when the blossom-buds are formed. It will greatly increase the richness of the flowers. Water the flower-beds freely, and let not a single weed or blade of grass live an hour after it has shown its head. Mark with little stakes the flowering bulbs, hyacinths, jonquils, tulips, &c., so that you may take them up in the fall and separate them before setting them out again in October or November.

The Orchard.

Cleft-grafting on the apple and pear should now be finished. Finish pruning. Remove all superfluous shoots and suckers. Rub off fruit-buds where they are too numerous. Look after the insects that prey on fruit trees and destroy them. One caterpillar's nest, not burned in time, will give a host of trouble

another year. Examine closely around the roots of the trees for worms. Fight the curculio relentlessly. Search the apple trees for the borer.

THE STRAWBERRY BED should be kept clear of weeds, and all runners cut away as they appear. In dry weather, water freely after sundown. A large and continued yield of strawberries cannot be obtained without plenty of water.

Hardy Flowers.

It will be good news to that numerous class—old-fashioned people—to know that the old-fashion flowers are to come up again. At least the horticultural papers tell us that they are "coming up" in English estimation, and what English and French do in these things it seems a matter of course that we must imitate. No one can ever go into an old-fashioned farm-garden, of which the German and Quaker element in Pennsylvania affords many illustrious examples, without a thrill of delight at the sight of so many of the floral acquaintances of twenty to forty years ago, which have since that time been banished from the gay and pretentious "beds" of highly aristocratic people. What, for instance, can afford more real delight

than a dense mass of the old-fashioned crimson peony,—or, as we used to pronounce it,—“piney?” The most brilliant bed of the modern-improved red geraniums will not begin to compare in beauty with a mass of these. And yet the florists tell us if we ask for this good old plant, that they do not keep it any more, but offer you instead a lot of “improved” kinds under the names of Pottsi and Whiteyi, and a lot of other “eyes,” as we see in a long list in a catalogue before us, which are neither red, nor white, nor anything decided, but simply “novelties of the latest introduction.” Glad shall we be to see the lot of motley intruders give place to the rich crimson kind of our old gardens and young days.

We scarcely need any more charming flowers than our old bergamont, the sweet William, the fringed pink, ragged robins, perennial phlox, double catchfly, Canterbury bells, and so-forth, although they have not Latin names which can be reeled off to the length of a moderate garden line; and it will give all of our old-fashioned people who have kept them in their glorious old gardens, through good report and through ill report, unfeigned pleasure to know that for some time to come—at least until some new freak of fashion upsets the programme—they are to be just the thing.

The culture of hardy flowers is so easy, and the satisfaction they give so great, that it is no wonder they are again growing into people's good graces. The only wonder is that people should have ever ran after strange gods, and left these innocent little flowers to the care of the good old farming people in the country districts, who, after all, have as fine a taste for the beautiful as those of far greater conceit.—*German-town Telegraph*.

A Dozen Choice Roses.

The American Rural Home says: We some time since addressed notes to the leading nurserymen and florists of this city, asking them to name a dozen of the best hardy roses, easily grown, free-blooming, and representing as far as possible the different colors, shades, tints and merits. We believe that a dozen roses might be named that would represent nearly every variety of merit in the rose, and that if such a list could be presented to our readers, but few of them would decline to avail themselves of the opportunity offered to procure a select list of roses.

After giving each list separately, it proceeds to sum up as follows:

Here we have seven lists by as many nurserymen of long experience, naming in all forty-one varieties. Let us examine them carefully, and see how much accord we can find among them:

Gen. Washington has the suffrage of all.....	7
Caroline de Sansal.....	6
La Reine.....	5
John Hopper.....	4
Victor Verdier.....	4
Gen. Jacquiminot.....	4
Baronne Provost.....	4
Anne de Diesbach.....	3
Madame Alfred de Rougemont.....	3
Triomphe de l' Exposition.....	3
Sidonie.....	3
Madame Victor Verdier.....	3
Madame Plantier.....	3
Perpetual White.....	3

14

Here we have fourteen, two more than our dozen, which three or more agree to include in the best dozen. Of those receiving three votes, we have three white ones—Madame Alfred de Rougemont, Madame Plantier and Perpetual White—the first a Hybrid perpetual, the second a Hybrid China, blooming but once in the season, and the third a Perpetual Moss. Perhaps we had better drop the second. Madame Victor Verdier being of a rose color, and somewhat resembling Victor Verdier of the same color and class, we may drop that, and then our list of a dozen would stand; Gen. Washington, Caroline de Sansal, La Reine, John Hopper, Victor Verdier, Gen. Jacquiminot, Baronne Provost, Anne de Diesbach, Madame Alfred de Rougemont, Triomphe de l' Exposition, Sidonie, Perpetual White.

We will give brief descriptions of this dozen, premising that authorities differ in the names which they apply to various tints and shades.

General Washington.—Brilliant, rosy carmine, approaching to scarlet; very large and fine form; free bloomer.

Caroline de Sansal.—Clear, delicate flesh color; becoming blush; large and full.

La Reine.—Brilliant, glossy rose color; very large; cupped and beautiful.

John Hopper.—Deep rose, with crimson center; very large and fine form.

Victor Verdier.—Clear rose, globular, fine form, and free bloomer.

General Jacquiminot.—Rich fiery crimson; abundant bloomer. One of the best for bou-

quets, but casts its petals too soon for a garden bloomer.

Baronne Provost.—Deep rose, very large and fine; free bloomer; vigorous grower.

Anne de Diesbach.—Bright rosy carmine; beautiful form; very large and double.

Madame Alfred de Rougemont.—Pure white; large and very double; profuse bloomer.

Triomphe de l' Exposition.—Rich deep red, shaded with crimson; flowers in large clusters.

Sidonie.—Light pink; very large and full; fine in autumn.

Perpetual White.—Pure white; blooms in clusters.

All but the last of these are Hybrid Perpetuals, a class blooming at intervals, from June to November. The last is a Perpetual Moss, a class that is also hardy, blooming at intervals through the season. Those who wish to add to this list another Perpetual Moss, will find Salat a good one. Those who wish climbers, will find Baltimore Belle and Queen of the Prairies the best of the class. And those wishing a yellow rose will find Persian Yellow the best of that class.

From the Lexington (Ky.) Farmers' Journal.

Strawberry Culture.

On looking carefully and intelligently at a healthy young strawberry plant, it will be observed that there is a little short stem, or, so to speak, body from which both roots and leaves spring, and that the former monopolize the greater part of one side of the stem, and the latter the greater part of the other. In preparing to make a new plantation take the "runner," or more properly young plants, which should be well rooted before being disturbed, up very carefully, retaining as many fibers, or feeders, as possible, open a hole, in the soft mellow earth, large enough to prevent cramping, fill in, firm, and see that the stem is just below the surface of the soil and no more. This last is an all-important item, when it is intended to keep the runners cut back, to form a large handsome "stool," to give good culture, and thus have the right to look confidently for gratifying results.

As regards distance, we think that the rows should be two and a half feet between one another; and every two plants in each row should be from ten to fifteen inches apart.

The fall and spring are the two best times for transplanting, and when the material is all

ready at hand, we like the one time just as much as the other. But when the plants have to be imported, we at once cast our vote for the latter, and thus throw the risk of loss during winter on the dealer. If setting out is done so early in autumn that a plentiful supply of roots has time to form before winter approaches, then a small crop may be gathered the ensuing year; but if the doing of this work is deferred until the activities of another season have opened, then every blossom should be picked off as soon as seen, so that nothing may be left undone, the performance of which will fortify the vegetative energies of the new venture.

Finally, it is evident that no country home, around which it is desired to gather everything calculated to promote comfort and refinement, can afford to be without the inexpensive appendage we have been discussing. And there are few more pleasing sights than a clean—and it is hateful to see anything else—patch of strawberries crowded with lovely blossoms, and giving promise of a bountiful supply of the best fruit. But the fruit should be kept out of the mud and their aroma thus retained, which it will not be, except in a partial degree, if it becomes necessary to resort to washing. And so the whole ground should be covered with straw, an act which will not only guarantee the purity of the berries, but increase their size; and will do this by preserving a uniform temperature about the roots, and by checking the evaporation from the soil.

The Fig.

This fine fruit may be regarded as of only secondary commercial importance to the orange. It is a hardier tree—even more easily raised (from cuttings); grows well either in the interior or on the seaboard; readily adapts itself to all soils; comes into bearing the second or third year from the cutting, and yields a larger return of fruit for the amount of labor generally bestowed upon it, than any tree we cultivate in the South. It is "passing strange" that a tree like the fig, growing almost spontaneously, bearing at such an early age, and producing, yearly, two or three crops of luscious and wholesome fruit, should thus far have been treated with such utter neglect. The only drawback attending fig culture on a large scale is the extremely perishable nature of the ripe fruit, which prevents distant transportation; but to remedy this defect we should imitate foreign countries, and *preserve* the fig

for home and distant markets, in syrup, by pickling, by drying (in cheap houses erected for the purpose), and in any other mode known to modern science. I commend this promising industry to the many persons of limited means throughout the Gulf States, who may desire to engage in a business at once useful and profitable, with every confidence that, if properly entered upon, it will be a sure success.—*D. Redmond.*

Large Pears and how Raised.

Some of our readers have heard of the magnificent pears raised by Mr. Leighton, of Norfolk, Va. The method of culture, given by him in the *Horticulturist*, is another proof of the old saying that "from nothing nothing springs," and that pears cannot grow without food. His trees, which are dwarf, are planted twelve feet apart each way—a little further would be better—in large holes, filled with topsoil mixed with a compost of muck, wood-mold and lime—the two first in about equal parts, and the lime one-twelfth. No crops are allowed to grow in the pear orchard before June, and the surface is kept clean. Strawberries Mr. L. finds to be the most exhausting. He remarks, "Persons who have not courage and disposition to spare the land and keep it thoroughly cultivated, should not embark in the business of pear culture." The holes in which the trees are set, and which are filled with earth and compost, are three feet deep—which is not in accordance with the theory that trees do best when the roots are near the surface. Mr. L. sums up as follows:

In short, the following are requisites for successful pear culture in Eastern Virginia:

1. Perfect drainage.
2. Stiffest clay soil.
3. Proper planting of the trees.
4. Clean culture.
5. Healthy trees (which can be had of responsible nurserymen direct, without the intervention of an agent, and imparting the satisfaction of having every tree true to name.)
6. Timely supply of proper food for growth of both wood and fruit.
7. Determination, patience, and sufficient of the sacrificing spirit to remove all fruit until the tree has sufficient wood to sustain it without checking the wood growth.
8. Judicious pruning (better none than too much).

9. Careful picking, packing, and handling of the packages.

10. The right kind of an agent to dispose of them.

Manure for Peach Trees.

I have used, the past year or two, a special manure on my peach trees with marked success. So far as I have tried it I have found it equally good for vegetables, and I see no reason why it is not a good manure for fruit trees of all kinds; in fact, I have known it to bring peach trees that were dying with yellows back into a bearing condition. I think very likely it will prevent the summer blight in pears. I intend to try it the coming season on small pear stock. I use for each acre, broadcast, the same quantity as for an acre of potatoes, and the following are the proportions:

120 pounds	Nitrate of Soda.
80 "	Nitrate of Potassa.
160 "	Superphosphate of Lime.
160 "	Sulphate of Lime.

The Nitrate of Potassa should be ground. After mixing the above together, add three or four parts of fine muck. When applying the mixture for the benefit of peach trees, spread evenly as far as the roots extend, and before a rain.—*P. H. Foster, in Horticulturist.*

TO LIFT A HELIOTROPE.—With a long-bladed knife cut the soil around the plant—cut deeply and smoothly; water freely. Next day repeat this operation. After sundown, on the third day, carefully lift the plant and place in the pot. Out the soil near the size of the pot required. Keep the plant in perfect shade for four or five days; keep moist.—*Horticulturist.*

GIRLS IN THE GARDEN.—If there is any one thing more beautiful than another in a garden of flowers, that thing is a beautiful girl, with a sun-bonnet on her head so wide and capacious that you have to get right square before her and pretty near her to see the glowing cheeks that are sure to be there, if she is at all accustomed to garden walks and works. Physically, there can be nothing better for daughters, and, indeed, for many wives, than to take sole charge of a small flower garden.

Sambo, in speaking of the happiness of married people, said: "Dat ar 'pends altogedder how dey enjoys themselves."

Household Department.

Domestic Receipts.

CHARLOTTE RUSSE.—One half pound of white sugar, four eggs, the whites and yolks beaten separately, and with the sugar; one quart of cream whipped as for syllabub. Dissolve one-half ounce of isinglass or gelatine in a cup of milk, and while warm mix cream and sugar and two vanilla beans, boiled in a cup of water, or flavoring to taste. A round tin pan must be prepared with sponge cake, called ladies' fingers, placed around and at the bottom very evenly and closely; pour the charlotte in it, and place it on the ice till wanted. Then put a round dish or plate on it and turn it out. The bottom will then be at the top and no cake at the bottom.

INDIAN FRITTERS.—Take three tablespoonfuls of flour, boiling water, the yolks of four eggs, the whites of two; hot lard or clarified dripping, and jam. Put the water into a basin, and pour over it sufficient boiling water to make it into a stiff paste, taking care to stir and beat it well, to prevent its getting lumpy. Leave it a little time to cool, and then break into it (without beating them at first) the yolks of four eggs and the whites of two, and stir and beat all well together. Have ready some boiling lard or butter; drop a dessert spoonful of batter in at a time, and fry the fritters to a light brown. They should rise so much as to be almost like balls. Serve on a dish, with a teaspoonful of preserve or marmalade dropped in between each fritter. This is an excellent dish or a hasty addition to dinner, if a guest unexpectedly arrives, it being so easily and quickly made; and it is always a great favorite. It takes from five to eight minutes to fry the fritters.—*Mrs. Beeton's Everyday Cookery.*

TEA CAKE.—Take one pound flour, one pound of sugar, three-fourths pound butter, and ten eggs, cream the butter and sugar together, beat the eggs very light—the yolks and whites separately—leaving out the whites of two eggs, mix, and beat well, take one-third of the mixture and bake in little heart-shaped pans, take another third and mix with it slips of citron, and bake in a square pan, with the remaining third put French currants, well washed, dried and rolled in flour, and bake in a square tin. Take a cup and a half of sugar, to the whites you reserved, and make an icing for your cakes, which spread on while warm, and mark into

squares or diamonds, with a knife to make it cut better. This is easily made, and will make two cake-basketsful for a small tea-drinking.

TO SODA EATERS.—It is asserted by celebrated dentists that the main cause of defective teeth is the extravagant use of soda, and cream of tartar in the manufacture of bread and cakes. Dr. Walker, a distinguished dentist, has published the results of some experiments made by himself. He soaked sound teeth in a solution of saleratus, and they were destroyed in fourteen days. With these facts before us, why will we persist in the excessive use of that which not only destroys the beauty of the face, but also takes from us that which our Creator designed should add to our health, comfort, and happiness?

Formerly, in a family of six, four whites, and two colored, we used from twelve to fifteen pounds yearly. But during the last ten years, we have scarcely used two pounds in a year; using in its place lime-water in all yeast preparations, and eggs in most cakes; eggs are far more delicate, and in no way objectionable, no matter if a little more expensive; better invest in eggs than in dentist's bills.

SEALING WAX FOR CANS.—Every housekeeper should make her own sealing-wax, as it is easily made, and convenient to have at all times. It is best to devote an iron skillet to the purpose. Proportions, one pound resin, quarter pound beeswax, and two ounces of tallow, melt it together, care being taken not to leave it a moment while on the fire. In sealing bottles and jars, cork closely, and dip into the cement, which makes them air tight. The same wax will answer for grafting. Also for sticking plasters, provided there is nothing better at hand.

CREAM PIES.—Five eggs beaten to a stiff froth; and five tablespoonfuls of dry, white sugar, to a pint of good sweet cream; add a cup of seeded raisins cut in half; and season with lemon extract and a little salt. Line deep plates with a good puff paste and bake till the cream is stiff set, so as not to be milky. This will make two pies.

MOCK APPLE PIE.—One cup of sweet light bread crumbs or soda crackers, two tablespoonfuls of sugar, one teaspoon of tartaric acid and enough water to moisten this well; pour the water boiling hot on to the bread, or crackers; flavor with any spice preferred; add a small lump of butter. This will make one pie. Bake with two crusts.

NAPLES BISCUIT.—One half pound sugar, one half pound flour, four eggs; drop on buttered paper, or tins, sift sugar over them, flavor with lemon, bake quick.

BEEF CAKE.—Chop cold roast beef, with a little fat bacon, or ham, season with salt, pepper, and a little onion, if to the taste; mix them well, and make into small cakes; fry them a light brown, and serve in a thick gravy.

VEAL RELISH.—Three pounds of veal, one pound salt pork, chopped fine, season with salt, pepper, and spices, if preferred, also the juice and rind of a lemon. Press into a pan, and bake one and a half hours.

PLUM PUDDING.—One quart of milk, eleven soft crackers pounded fine, seven eggs, whipped to a stiff froth, one pound raisins, one wine-glass of wine, one of brandy, the juice and grated rind of a lemon, one half cup of nice suet chopped very fine, mace, and other spices, with sugar and salt to the taste. If made and baked properly, it will keep several days.

PUDDING SAUCE.—Take a cup of white sugar, and half cup of butter, work them together to a cream, then thicken a cup of boiling water with a teaspoonful of flour, stir this into the sugar and butter, adding a wine-glass of brandy, and the juice and grated rind of a lemon. Sweetened cream is a favorite sauce for most boiled puddings.

CORRECT WAY TO SWEEP A CARPET.—There are three ways to sweep a carpet—one right and two wrong ways. One wrong way is to hold the broom nearly in front of the operator, with the handle inclined backward toward him, then press down as a forward thrust is given, and thus heave the heavier dirt half away cross the room, while the light particles are sent whirling about, covering, as it settles, every article of furniture.

Another wrong way to sweep a carpet is to move the broom forward with a heavy, drawing stroke, by which the material to be moved is pressed into the carpet rather than worked gently along on the surface. If either of these wrong ways is adopted, the broom will wear out the carpet more than it is worn by the occupants of the dwelling. When a sweeper collects a dust-pan full of the nap of the carpet every time it is swept, a new one will soon be required. The right way to sweep is to incline the handle a little forward, then give a light drawing stroke, allowing the broom to scarcely touch the carpet. Not one half the weight of

the broom should be allowed to press on the carpet, as the dirt is moved forward. Let the dirt be moved and rolled along lightly.

If a generous quantity of tea-grounds, small bits of wet paper, or clean and wet sawdust can be spread over the carpet before the sweeping is commenced, all the fine dirt will adhere to the wet materials. A little smart woman who is terror to dirt will frequently hurl it about the room as if it were impelled by a whirlwind, and when the task is ended her dust-pan will contain scarcely enough to pay for sweeping. But by using a good broom, having a long elastic brush, touching the carpet lightly, it will scarcely require the strength of a child to sweep a large parlor in a few minutes. Scarcely one house-keeper in fifty understands how to sweep a carpet correctly.—*From Science of Health.*

A GOOD CUP OF COFFEE.—For the benefit of our readers who are fond of this article, we publish the experiments of the editor of the Boston Journal of Chemistry:

"For a long time I used the coffee-grounds as coarsely as it is sold in the shops. Although procuring the best berries possible, I did not uniformly succeed in obtaining at the breakfast table a first-rate beverage. I consulted many wise-acres, some of whom said that the water used should be hotter, others that the coffee should first be soaked in cold water, etc., etc. By accident one day I happened to have the coffee re-ground to the fineness of snuff. Herein lay the mystery. I have never since failed to obtain a strong, full-flavored beverage, and that too, without using so large a quantity of coffee."

Words over our Work.

"MASTERLY INVENTION."

Last week I had some words with the reader about recipe peddlers, and now I wish to speak of another variety of peddler—the gentleman who goes over the country hawking his "masterly inventions." The South is full of such interesting "critters" just now, and they are more universal in their habits than is the recipe peddler, for while the latter generally confines his operations strictly to the rural districts, the men who sell "inventions" infest city and country alike.

These peddlers of "masterly inventions" are intolerable nuisances, and, generally speaking, unmitigated swindlers. In nine cases out of ten their wares are not worth one cent the cart-

load; that is, in the way the venders claim they are valuable. An article of real merit is never introduced in such disreputable way—it introduces itself without the aid of vulgarity and slang phrases.

Not long since we had a man in Mobile selling a patent thimble with a "masterly invention" attached called

A SELF-THREADER.

The hawker claimed that a blind person could thread a needle with his wonderful machine with all the ease imaginable. Every lady in my neighborhood was made the happy possessor of one. People will buy such things because they don't cost much. I had the good fortune to receive two as presents, and, of course, I am ever grateful. They are comical curiosities to own, those thimbles with great brass slugs soldered on the side of them, but they won't work as self-threaders. I have never yet heard of the lady who has settled down to their use—they all find the contrivance a very good thing, only to thread a needle with it is a somewhat difficult task. The blindest who pretend to use a needle at all, prefer threading without the aid of the threader.

Another "masterly invention" that came around was a "butcher-knife" with

POTATO-PEELER

attached. My husband brought one of them home. It looked like a shoe-maker's knife, of inferior grade, with a piece of wire attached so that it could be slipped around to act as a gauge to prevent one's cutting the potato too deep. This would all have worked well enough if the knife had been made first and then the potato made to suit it, but unfortunately potatoes are not all the same shape, and they sometimes have depressions in their sides, all of which interferes sadly with the gauging business. Our knife is not now in use.

The latest "masterly invention" before our public, so far as I know, was a

KNIFE-SHARPENER.

I must tell you about that. Last week I went to town, and in front of the Custom-house, I found a man erected upon a rostrum making the usual speeches. He had a large knife in his hand, and he first raked the edge of it across a stone, making the fire fly, then he raked it across a bar of iron, then he filed the edge, until it was undoubtedly as dull as a hoe. I stood back in the Custom-house to see what he would do with it, and I soon saw. He

brought it once across his knife-sharpener, and lo, and behold! it shaved cork like a razor. I was converted. There could be no humbuggery about this; so I sent a boy out with the stipulated price, and went rejoicing on my way with a knife-sharpener.

My husband and eldest son were both in town that day, but I said nothing to them concerning the new purchase until we were home and at the tea-table. I purposely put a dull knife at my own plate, intending to astonish all concerned when the proper time should come. It came. My knife would not cut—I complained of it, and then with apparent unconcern I drew forth my knife sharpener and began to draw my knife through its magic groove. A rasping noise somewhat like my operations were making astonished me coming from each elbow, and looking I beheld my husband at one side of me and my son at the other, each gravely drawing his knife through a "knife-sharpener." Such a laugh!

Well, all I have to say now is, that those three knife-sharpeners are for sale, and any body desiring to invest can have the entire stock at wholesale for thirty cents, and I am not certain but he might Jew us down to a quarter for the three. They are good things, and will work well in every case where the knife has been made to suit them exactly, and the operator has served a regular apprenticeship at the trade of working them, and has thoroughly mastered his somewhat difficult trade.—*Mary C. West, in Mobile Register.*

Home on the Farm.

The farm preserves the family in its integrity. The home has in that charming word, and that still more charming thing, the fireside—around which parents and children gather, and where the bright and cheerful blaze upon the hearth is but a true type of the flame of love that glows in every heart. The parents have been drawn together, not by the sordid motives of wealth, or by the ambitious desire of social display, but for the personal qualities seen in each other. The glory of that fireside to the husband is that the wife is there, and to the wife that he is there. Here they gather at morning, and at evening, and at noon. Their board is almost always surrounded with the same circle. Here they spend the long winter evenings together, enlivened with the school-books of children, the newspapers and journals, and works of history and science. A constant homogeneous influence goes forth from this circle to the young hearts that are molding there. Paternal vigilance guards the young against wicked companions. If these comprehensive religious influences are right in that home, they all grow up to be good citizens, to be the pillars of society, wherever their lot may be cast. The sons follow the business of their father as soon as their labors are available. They are with him in the field, and by the way, and at home. They form industrious habits, and are prepared for the responsibilities of life.

Insurance Department.

When is it Safe to be Without Insurance?

But the study of tables of mortality may be recommended to men who think they can do without insurance. And if they will study the columns in which the deaths that occur during the year are placed as closely as the columns in which the numbers living through the year are placed, the importance of life insurance may begin to appear in its true light; and those with dependent families will see that protection is needed, and such protection as only can be found by insuring.

The following table shows the chances for living or dying during the year, at the age indicated in the left-hand column, according to the experience of twenty and of seventeen life companies:

AGE.	Chances for living by experience of 20 life companies	Chances for dying by experience of 20 life companies	Chances for living by experience of 17 life companies	Chances for dying by experience of 17 life companies
20	992.93	6.07	992.70	7.30
25	994.43	5.57	992.28	7.72
30	991.59	8.41	991.57	8.43
35	991.48	8.52	990.71	9.29
40	989.90	10.10	989.63	10.37
45	987.67	12.33	987.78	12.22
50	983.59	16.41	984.06	15.94
55	977.41	22.59	978.83	21.17
60	969.88	30.12	969.68	30.34
65	957.25	42.75	955.91	44.09
70	944.41	55.59	935.06	64.94
75	908.26	91.74	901.43	98.57
80	867.62	132.38	859.59	140.41
85	782.20	217.80	794.90	205.10
90	735.54	264.46	676.27	323.73
95	584.74	105.26	415.73	584.27

It will be noticed that the chances for dying, according to the seventeen companies, are greater than the twenty. In the seventeen companies the calculation is based on the number of policies which become claims, and as some held more than one policy, the death-rates are too high; but in the twenty companies great care was taken to avoid this error. Thus, when a member died having two or more policies, they were counted one claim only. A little attention to the above table will show the reader how safe or unsafe it is to be without insurance.

The table is based on the supposition that all the chances for living and for dying are 1,000. Now, if we subtract the chances of living from 1,000, the remainder will be the chances for dying. Or if we subtract the chances for dying from 1,000, the remainder will be the chances for living. If at any age we add the

chances for living and for dying together, the sum is 1,000.

Again, as the observations in the experience of the twenty companies are upon healthy lives which had undergone a medical examination when the insurance was made, we have no good reason to suppose that our chances for living are greater than those expressed in this table. At 40 years old a man in good health has 989.9 chances to live through the next year and 10.1 chances to die during that year.

And here the practical question comes up, Is it better for this man, with a dependent family, to pay a company the premium, which it would charge, to take these 10.1 chances, or to keep that premium and run the risk of the consequences which these chances may bring upon his family?

We have heard men with dependent families say, "I will insure myself," or, "I will carry the risk myself." But how can he do this when the loss cannot fall upon him, but must fall upon his family. At my death I cannot sustain any pecuniary loss, but my family can. And this fact is the one which demands my serious consideration. As an individual I can have no pecuniary wants after my death, but the surviving members of my family will have such wants. And if I undertake to insure myself or carry my own risk, my family has not that protection which they need.

Suppose at age 40, one of the 989 chances for living through the year fails; then one of the 10 chances for dying in the year would not fail. What then? Death will occur. But, to make the idea a little clearer, suppose the chances for living are 99, and for dying 1; then if one of the chances for living fails, the one for dying will not fail. It may be said that the chances for dying compared with the chances for living are so small that the risk is not great; but because the risk is not great, the loss to the family will be none the less, should death occur. The loss to the family is precisely the same, whether the chance for loss is one or ninety-nine in one hundred.

It is not the amount of money one has left when the balance is made at the close of the year that determines exactly the profit of the farmer, but when ten or twenty years have passed, and he finds himself in possession of a comfortable home, a farm in high condition, good buildings, fine stock, some surplus money at interest, and no debts, his children well educated, the farmer may count his career as successful. This is far more than the majority of business men attain, but then we rarely look at the majority for a lesson; it is the success of the few which puzzles; when the sun shines the stars are not seen.—*Northwestern Farmer*.

The Southern Farm and Home.

MEMPHIS, TENN., APRIL, 1873.

WM. M. BROWNE, - Editor and Proprietor.
BOYLE & CHAPMAN, - - - Publishers.

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Invariably in advance.	

GENERAL JOHN B. GORDON.—Our frontispiece for this month is a portrait of **GENERAL JOHN B. GORDON**, United States Senator from Georgia in the present Congress.

Gordon's name and fame are deservedly dear to the Southern people. They remember with pride his distinguished services in the glorious army of Northern Virginia, in which, as the peer of such men as Stuart, Hampton, Early and Hill, he illustrated Southern valor and Southern patriotism on many a battle-field.

They remember too the earnestness, disinterested devotion and ability with which, since he sheathed his sword at Appomattox, he has striven to improve the condition of his fellow countrymen, and nerve them by precept and example, to noble endeavor and lofty and honorable enterprise.

The State of Georgia has done honor to herself by honoring Gordon with the highest representative office in her gift. She is represented by a Southern gentleman *par excellence*, a man of intellect and culture, whose honor is as bright as was his sword, whose every impulse springs from truth, and whose every purpose is fashioned and guided by approved principle.

"AGRICULTURE AS A PURSUIT."—We would thank **Dr. E. M. Pendleton**, the recently-elected Professor of Agriculture in the University of Georgia, for a copy of his able and instructive address with the above title, which he delivered as his introductory lecture to the agricultural students of the University.

The trustees have made a very judicious selection in calling **Dr. Pendleton** to occupy the chair of agriculture. He has large experience in the practice of agriculture, and has devoted much time and study to agricultural chemistry. Some very able papers from his pen appeared in the earlier numbers of the

FARM AND HOME. We wish him and the Georgia Agricultural College the fullest measure of success.

HYBRIDIZED COTTON.—**Mr. J. G. Radford**, of Baldwin Co., Ga., has kindly sent us a sample of some very fine, silky and long staple cotton raised by him on common pine land, in Wilkinson Co., Ga. He improved the staple by hybridizing the common cotton and the sea-island, and though the result is not as fine as the latter, it is a decided improvement on the former. He has not given us his *modus operandi*, but we suppose it was planting alternate rows of sea-island and upland cotton, the pollen from the former impregnating the latter and producing the seed from which the sample sent us was raised.

TO OUR SUBSCRIBERS.—We would again request our subscribers when remitting money for the **FARM AND HOME**, not to send bank bills by mail, but to remit by Postoffice order, registered letter or by Express.

CATALOGUES.—We are indebted to **James Fleming**, Nassau street, New York; **James J. H. Gregory**, Marblehead, Massachusetts; **Pinney & Co.**, Sturgeon Bay, Wisconsin; and **R. H. Allen & Co.**, Water street, New York, for their useful and beautifully-executed illustrated catalogues of garden seeds, flowers, garden implements and ornamental plants. These catalogues are a most valuable guide in the selection of seeds for the vegetable and flower garden, and for the orchard and lawn.

THE FRUITLAND NURSERIES.—**Mr. P. J. Berckmans**, the well-known proprietor of the Fruitland Nurseries, near Augusta, Ga., has sent us his illustrated catalogue for 1873, of Greenhouse, Bedding and new plants. We can confidently recommend **Mr. Berckmans** as well worthy of patronage. He is an accomplished horticulturist, and whatever he offers for sale is the best of its kind.

ALL LETTERS relating to the editorial or business departments of the **FARM AND HOME** should be plainly addressed to **WILLIAM M. BROWNE**, Memphis, Tenn.

REMITTANCES to the **SOUTHERN FARM AND HOME**, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

DR. DROMGOOLE.—We invite attention to this gentleman's advertisement, in another part of this issue. While we know nothing of his medicines we know the Doctor very well as a physician of character and as a worthy and reliable gentleman.

THE FOURTH ANNUAL FAIR of the Agricultural and Mechanical Fair Association of the Cherokee Country of Georgia and Alabama will be held at Rome, Georgia, on the 8th of September, and continue during the week.

THE CROPS.—From our own observation, during a recent trip through a large portion of Tennessee, Alabama, northern Georgia, South and North Carolina, Virginia, Maryland and Kentucky, and from letters which have reached us from the other States of the South, we believe that the preparations for spring planting have never been so backward as this year, within our recollection. Even garden patches were generally still unworked, and only here and there a plow in the field scratching a portion of the surface and preparing for corn-planting. As we write this 25th day of March snow is falling, with a poor prospect for field work.

This is unfortunate, but it should not be discouraging. If we will only do our work well, even though we are in a hurry, we may still gather fine crops. But we must do it thoroughly. The later the season for planting the greater the necessity for a good and careful preparation of the soil.

We observed during our journey, both by the senses of sight and smell, that unusually large quantities of the commercial fertilizers are to be employed this year. Every depot along our route was crowded with sacks and barrels of the odoriferous compounds.

We also observed, with deep regret, large quantities of Northern hay and Western corn addressed to planters for immediate use. How can men, who at this time need to buy corn and forage to make the next crop, expect to make money by farming?

We heard an almost universal complaint of hard times and want of money. This complaint must continue with increasing reason for it, so long as the suicidal policy is pursued of devoting all the labor, means and attention of planters to raising cotton, and purchasing, frequently with borrowed money, thus early in the year, all the needed supplies to make the crop.

VOL. IV, No. 6—3.

COLL'S.—The attention of our readers is requested to the advertisement on the last of the advertising pages, of the well known establishment of Joseph Coll, 273 Main street.

THANKS.—To our many friends throughout the South who are making such generous efforts to extend the circulation of the *FARM AND HOME*, forming clubs and sending names of new subscribers, we would offer our best and most hearty thanks.

GRIFFIN & HOFFMAN, ADVERTISING AGENTS. The card of this well known and deservedly popular firm will be found on the third page of the cover. From what we know personally, and what we learn from others, concerning Messrs. Griffin & Hoffman, we feel justified in recommending them as enterprising, prompt and reliable advertising agents.

NEW DIRECTORS OF THE CAROLINA LIFE INSURANCE COMPANY.—At a recent meeting of the Directors of the Carolina Life Insurance Company, the following gentlemen were elected directors to fill vacancies at the Board: Hon. J. W. Clapp, Thos. H. Allen, Esq., and James S. Wilkins, Esq.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the *FARM AND HOME* and any of those papers at the subjoined reduced rates:

<i>FARM AND HOME and Weekly Memphis Appeal</i> , per annum.....	\$3 50
<i>FARM AND HOME and Weekly Memphis Register</i> , per annum.....	\$3 00
<i>FARM AND HOME and Weekly Arkansas Gazette</i> , per annum.....	\$3 00
<i>FARM AND HOME and Columbus (Miss.) Democrat</i>	\$3 00

In addition to these we can furnish the *FARM AND HOME* and any one of the following valuable periodicals at the following prices:

<i>FARM AND HOME and Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
<i>FARM AND HOME and Southern Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME and Harper's Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME and Lippincott's Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME and Appleton's Journal</i> , per annum.....	\$5 00
<i>FARM AND HOME and Hearth and Home</i> , per annum.....	\$3 50

THE FIRST ANNUAL FAIR of the East Texas State Agricultural, Mechanical and Stock Raising Association will be held at Jefferson, Texas, May 26th to 31st.

We are informed that Philander Williams, of Taunton, Mass., has sold his entire stock of Partridge Cochins, numbering some eighty odd head, to T. S. Cooper, the noted stock breeder of Coopersburg, Pa. Amongst the party are a number of imported fowls and all his prize winning birds, which he valued very highly. Mr. Cooper intends making a specialty of Partridge Cochins, with his herd of Short-horns, Berkshires and Cotswolds, from which he has won quite a reputation. Mr. Cooper has also bought of Jas. M. Wade, Esq., (late Wade & Henry,) of the Oak Lane poultry yards, his entire breeding stock of imported and home-bred Dark Brahmas and Buff Cochins.

Answers to Correspondents.

PYRACANTHUS HEDGES.—P. R. McS., Cotton Gin, Texas, asks, Will pyracanthus hedge plants thrive well near tall timber?

No hedge plant will do well when planted too close to trees. Pyracanthus will do as well as any other.

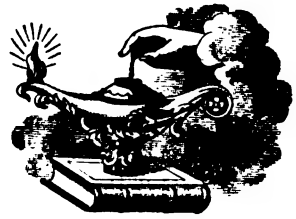
LIMING LAND, S. C., near Spring Hills, says: "I have a piece of poor land I wish to make rich as fast as possible. The land is sandy clay subsoil. I wish to use lime as a manure. How much lime per acre would be enough?

Unless there is humus in the soil, lime will not answer the purpose desired. To make the land "rich as fast as possible," we recommend our correspondent to raise cow-peas and turn them under, with two or three bushels of lime per acre sprinkled over the pea-vines before they are plowed in.

S. N. DUNWOODY, Perry, Georgia: Your communication received. Will give you a full reply in our number for May. We regret that we did not receive it in time for reply in this issue.

MR. D. DANFORTH, proprietor of the Jefferson Nursery and Fruit Tree Depot, Jefferson, Texas, has our thanks for a copy of his valuable descriptive catalogue of fruit trees, containing every variety of peach, apple, pear, plum, apricot, nectarine, cherry, quince, raspberry, blackberry, &c., besides a large number of flowering and ornamental shrubs.

Literary Department.



EDITOR'S BOOK TABLE.

HANDBOOK OF SOCIAL ECONOMY OR THE WORKER'S A. B. C. By Edmond About. Translated from the French, 12 mo. pp. 284. (D. Appleton & Co.) Among modern French writers there are none more able or more sprightly than Edmond About. His "Roman Question," and his "Greece" are excellent works, both in matter and style, and the book before us, which is a series of essays written for working men on the leading subjects of Social Economy, fully sustains his reputation. The chapter on "Strikes" is full of practical wisdom, and exposes with much power of fact and illustration, the folly of the attempt of labor to become the master and controller of capital. The arguments which the French essayist uses in dealing with social questions in France have pointed application in our own country, where demagogues are constantly striving to array the poor in hostility against the rich, and we especially commend to the careful perusal of the working men of America, M. About's capital work, which is the best, because the simplest and most intelligible presentation of the relations between employers and employed that we have seen in print.

LECTURES ON LIGHT. Delivered in the United States in 1872-'73. By John Tyndall, L.L. D., F. R. S., Professor of Natural Philosophy in the Royal Institution. 12mo., pp. 194. (D. Appleton & Co.) These six lectures which compose the neat little volume now on our table were delivered in New York, Boston, Philadelphia, Baltimore and Washington during the recent visit to the United States of Professor Tyndall, who is universally admitted to be the highest authority now living on all matters relating to natural philosophy. The subject is full of interest, and is treated in these lectures with that skill, clearness and simplicity of style which distinguish all of Tyndall's works. He makes the most abstruse scientific questions intelligible and attractive to the unscientific reader. The work is beautifully printed on excellent paper.

AN OPEN QUESTION: A Novel. By James De Mille, author of "Cord and Oreesa," "The Lady of the Ice, &c. (D. Appleton & Co.) Any one who likes a sensational novel will be delighted with this book. It is made up of sensations of the first class, and they follow in such rapid succession that the reader, having got through one, has not time to recover his breath before he finds himself in the midst of another, and each seems more startling than the one which preceded it. The villain *par excellence* of the story (there cannot be a truly sensational novel without a villain or two) is one Kevin Magrath, a pretended priest, who spends his entire life in an effort to rob the estates of his friends, and whose favorite mode of disposing of those who stand in the way of the realization of his schemes, is to get them under one pretence or another, to visit the catacombs at Rome and leave them to perish there. By good luck, however, all his victims escape, defeat his machinations and are made happy, though they have fearful adventures before Kevin disappears forever in one of the passages of the catacombs.

Mr. De Mille's rendering of the Irish pronunciation and of the language of educated Irishmen and women is extravagantly exaggerated. The Irish peasants freshly landed at Castle Garden scarcely "murder the Queen's English" to the extent that O'Rourke and Miss Bessie Mordaunt are made to say it. This is a defect. But the book is really amusing, and will be read from end to end by every one who commences it.

ROBIN GRAY. A Novel. By Charles Gibbon. (Harper & Brothers.) We do not know when we read a book which pleased us as much as this. We commenced it with the impression that it was going to prove a rather dull and prosy story of peasant life in Scotland, rendered duller and more uninteresting from the constant use of the Scotch dialect; but before we read many pages we became deeply interested in what we consider one of the best novels of the day. Jenny, the heroine, is an admirably drawn character, pure, simple, faithful, and perfectly true to nature. The scene between her and Robin Gray, when, as the victim of a cunningly-laid plot, she seems to have been false to her husband, and had secret interviews with Jamie, her first love, is powerfully drawn. The dignity of innocence falsely accused, her pathetic recital of the circumstances which led to the meeting, the honest pride with which she vindicates her virtue, the passionate jealousy of the husband, his violent denunciation of the supposed treachery of his wife, and the grand indignation of the old father as he defends the character of his child, are portrayed with great force. The plot is well conceived and admirably worked up, and not unfrequently suggests a comparison with

some of the masterpieces of Walter Scott. Girzie's denunciation of those who caused the death of her idiot son, Wattie Todd, is scarcely inferior in wild grandeur to the scene in the Highland Widow, where Elspath curses the soldiers who shot her son Hamish MacTavish for desertion.

LIPPINCOTT'S MAGAZINE for April is a very good number of this popular periodical. The first article relates to the industrial enterprises of Wilmington, Del., and contains a number of good illustrations. The second installment of "The Roumi in Kabylia" is an amusing paper. "Thackeray's Gray Friars," by an old "Gown-boy," gives interesting reminiscences of that ancient and renowned institution, the Charterhouse School. "The Sweet Waters," by M. DeLeon, is a well-written description of the holiday resorts of the people of Constantinople, known there as the Sweet Waters of Asia and the Sweet Waters of Europe. William Black's new story, "A Princess of Thule," reaches its fifth chapter in this number of Lippincott, and promises well.

HARPER'S MAGAZINE for April is more than usually full of well-written stories and poems, interesting articles on scientific subjects, travels, &c., and sketches replete with humor. Charles Reade's "A Simpleton—a Story of To-day," Wilkie Collins' "The New Magdalen," and Miss Thackeray's "Old Kensington" are enough in themselves to make the magazine attractive. The following are the contents, in addition to the usual "Records," "Easy Chair" and "Drawer:"

The Cradle of the New World—S. S. Conant; Doubt—Tracy Robinson; Pigeon-Voyagers—Miss E. B. Leonard; Till Death—Mrs. J. G. Burnett; The Mountains—Porte Crayon—Gog, Magog & Co.—Lyman Abbott; Agricultural Laborers in England—Moncure D. Conway; Told in the Drawing-Room—James Payn; Recollections of an Old Stager; Sea and Shore—Charles Nordhoff; Old Kensington—Miss Thackeray; Horace Greeley—Junius Henri Browne; A Simpleton: A Story of To-day—Charles Reade; Baby and Mustard Playing Ball—Will Wallace Harney; The New Magdalen—Wilkie Collins; Voice and Face—Ellis Gray.

The April number of the **SOUTHERN MAGAZINE** is well worth reading. It contains a number of excellent papers, the most noticeable of which are the sketches of the late Lord Lytton, and of Beranger, and the article on the Progress of Radical Government. We have repeatedly recommended the Southern Magazine as richly entitled to a large measure of Southern patronage, being, apart from its being a Southern enterprise, one of the most ably conducted periodicals in the United States. The present number has a very well executed steel engraving of the late Commodore M. F. Maury.

ECLECTIC MAGAZINE. The Eclectic for April has an excellent portrait of Professor Owen, finely engraved on steel, and a very attractive

table of contents selected from all the leading foreign periodicals. Among the more striking papers are: "The Unpublished Letters of the Princess Charlotte;" "Æneas Sylvius Piccolomini, the famous Pope Pius II;" "Instinct; with Original Observations on Young Animals;" "The Year of the Great Snow;" "The Great Fairs and Markets of Europe;" "Oliver Cromwell;" "Thoughts upon Government," by Arthur Helps; "Sea Novels—Captain Marryat;" "The Original Prophet," by a Visitor to Salt Lake City; "Autumn Days in Stockholm;" "Marriage in China;" and additional chapters of the striking story, "Too Soon," by the author of "Patty." The Editorial Departments are very copious and entertaining, and embrace Literary Notices of recent books, Foreign Literary Notes, Science and Art, and Varieties. The latter contains choice reading from new books and foreign journals. Published by E. R. Pelton, 108 Fulton street, New York. Terms, \$5 a year.

PRAIRIE FARMER FOR 1872-73. This sterling journal, now entered upon the thirty-third year of its usefulness, is the most popular and pre-eminently the best Western farm and fireside journal. It is original, reliable and comprehensive, each number presenting a rich variety of instructive and entertaining matter. Issued weekly, its contents are always fresh and seasonable, and notwithstanding its present high standard of excellence, its uniform progressiveness warrants the expectation that it will be a better paper next year than ever before. Though designed especially to meet the wants of Western, Northwestern and Southern farmers and industrial men, and their families, it is also just what is needed by the thousands of people at the East who contemplate "going West," and hence wish to know all about Western farming, fruit growing, tree planting, cost of land, improved and unimproved, character of soil and climate, mode of cultivation, average yield, &c.

The subscription price is \$2 00 per year in advance, and the price of the *FARM AND HOME* is \$2 00. We will send the two papers for 1873, for \$3 00.

The publishers have just issued their New Premium List, which embraces one hundred attractive and useful articles, offered on most desirable terms. Address The Prairie Farmer Company, 674 Wabash Avenue, Chicago.

LITTELL'S LIVING AGE, the best Eclectic periodical that we know, seems to grow more interesting in every succeeding number. The last number that we have received (March 22d) contains a number of able articles, the most noteworthy of which are "Froude & Calvin," from the *Cotemporary Review*; "The Span-

ish Republic," from the *Spectator*; "Hereditary Abdication," from the *Pall Mall Gazette*, and "The Issues Raised by the Protestant Synod of France," from *Blackwood*. The installments of "His Little Serene Highness," by Fritz Reuter, and of "The Two Brothers," by M. M. Erckmann-Chatrian, are very good. The subscription price of the *Living Age* is \$8 00, and of the *Living Age and FARM AND HOME* \$9 00.

Correspondence.

Corn Enough vs. All Cotton and No Corn.

CLARENDON, ARK., March, 1873.

MR. EDITOR—Will our people never learn how to vary their crops so as to raise those things they must have and can raise so abundantly upon our rich soil? We rely almost exclusively, in this country, upon corn for forage, and what little hay and oats we have, are grown elsewhere; and, after passing through many hands, they reach us, with freights, charges, etc., added to original cost, until that is almost doubled. Not one farmer in twenty, in this county, sows oats, or any other small grain, and not one in fifty has a grass lot or meadow. In 1870, we planted cotton largely, almost to the exclusion of everything else, and we know the result. Cotton was very low, and hardly paid for gathering and getting it to account of sales. Corn was scarce and very high, and yet with us was the sole reliance upon which to begin the new crop for 1871. Many were buying before their crops for that year had been planted, and as there was none for sale in the country, of course it had to come from Memphis, with freight at forty cents per sack, storage ten cents, wastage ten per cent, and inferiority of the article, as a general rule, to that raised at home, with value of shucks off, ten per cent., with original cost at eighty cents per bushel, it could not have cost, by the time the farmer hauled it home, less than one dollar and twenty-five cents per bushel. Now, we all know that at such prices, corn is far more profitable than cotton, and, we therefore readily admit, that a consideration of our own interest ought to induce us to raise enough corn, at least, for our own use, and to prevent the recurrence of such a state of things as existed, in that respect, in 1871. In 1871, our farmers generally *did* plant a large crop of corn, and their labors were crowned by a fruitful season, and a bountiful harvest; corn being worth in the fall at gathering time from forty to fifty

cents per bushel. Having an unusual quantity of corn for this country, many seemed to be very uneasy, and sought in all possible ways to get rid of it; and some sacrificed it, seeming to fear they might lose its value, unless they could soon dispose of it. In 1871, hogs became plentiful, and continued so through 1872, being kept up upon the surplus corn of 1871. In 1872, our people again plunged into cotton, and what corn they planted was neglected, and having been cut short by the drought, made a very poor yield generally. Corn, at gathering time in 1872, opened at seventy-five cents per bushel, but it has since reached a dollar, and there is very little to be had at that; what it will be worth before the season is over, we cannot guess. The large number of hogs that were in the country last fall, commenced to die early, for the want of food, as the mast had entirely failed. And now hogs are comparatively scarce, and by fall, even should there be an abundant mast, and a good crop of corn this year, there will be no hogs to eat it; and we will be ready to exclaim, when the mast does come, "we never have any hogs to eat it." Now, Mr. Editor, this is the "rotation" with us. Can you not do something for us?

I have for more than twelve months been a constant and much interested reader of your invaluable journal, and feel satisfied that if all could read and ponder its suggestions in regard, especially, to the raising of a sufficiency of corn and the cultivation of the grasses and forage plants, which grow best in our soil and climate, they would cease to worship king cotton alone, and that thrift, freedom from debt, independence, content, and affluence would ultimately crown their well-directed labors. I feel so thoroughly impressed with this belief, that I think I ought to have patriotism enough to endeavor to extend the circulation of the *Southern Farm and Home* in our community, and shall certainly try to do so. I feel assured you are doing much good for the cause of agriculture wherever your journal circulates.

Respectfully yours,

S. P. H.

How to Make Irish Potatoes.

SMITH COUNTY, TEXAS, March, 1873.

MR. EDITOR—Having heard so much complaint of failures in the Irish potato crop, I have concluded to give your readers my mode of managing them, and hope many may be benefitted thereby. I plant, but never cultivate them at all. Now, the question naturally

arises in many minds how I make any at all; but when it is remembered that there is a period in the growth of the potato, at which time, if it is worked the crop will always prove a failure; consequently I have been induced to try some plan to insure me a crop of that valuable vegetable; therefore, for several years I have planted my potatoes in what is called a lazy bed, (but if properly fixed it might well be called by any other name.) I begin my bed by running two furrows with a turning plow as deep as possible, and throwing the earth in the same direction; in the second furrow I drop the potato (having previously cut them, leaving at least two eyes on each piece) about fourteen inches apart, skin-side up. Upon each potato I drop a small handful of hog hair, and upon this I drop one double-handful of well-rotted chip manure from the wood-pile. I then cover with the turning plow, throwing the earth in the same direction, and at the same time open a new furrow for the reception of another supply of potatoes, hog hair and manure, as before. I continue to plant potatoes in every furrow, until I have my bed as wide as I wish. I then smooth off the surface with a rake, taking care not to tread the bed down; after which I mulch with wheat straw, if I have it; otherwise, I use leaves or trash of any kind, to keep down vegetation. If the bed is mulched with straw sufficiently, there will be many potatoes matured entirely above ground. I have planted after the above plan for several years successfully. Before I had only accidental crops. Now, if you think the above worth room, it is your property.

LAZY BED.

Chufas, &c.

VIENNA, GA., March 17, 1873.

EDITOR *FARM AND HOME*—I am well acquainted with Mr. Stokes, of Lee county, and I fully endorse his statements in regard to Chufas. I know from actual observation that hogs will pass over the potato and ground-pea patches almost unnoticed to get to the chufas, and as to getting rid of them, where hogs get to them, they are no harder to eradicate than the common ground-pea. (I have no chufas to sell.)

I like your journal much—it was worth ten times the amount of subscription to me during the past year, and so long as I can pay for it shall be a regular subscriber.

Very respectfully, &c.

J. H. W.

Poetry.

The Old Coat of Gray.

BY BLONDINE.

It lies there alone; it is rusty and faded,
 With a patch on the elbow, a hole in the side;
 But we think of the brave boy who wore it, and ever
 Look on it with pleasure and touch it with pride.
 A history clings to it; over and over,
 We see a proud youth hurried off to the fray,
 With his form like the oak, and his eye like the eagle's,
 How gallant he rode in the ranks of "the Gray!"

It is rough, it is worn, it is tattered in places,
 But I love it the more for the story it bears;
 A story of courage in struggle with sorrows,
 And a heart that bore bravely its burden of cares.
 It is ragged and rusty, but ah! it was shining
 In the silkiest sheen when he wore it away,
 And his smile was as bright as the glad summer morning,
 When he sprang to his place in the ranks of "the
 Gray."

There's a rip in the sleeve, and the collar is tarnished,
 The buttons all gone with their glitter and gold;
 'T is a thing of the past, and we reverently lay it
 Away with the treasures and relics of old;
 As the gifts of a love, solemn, sweet and unspoken,
 Are cherished as leaves from a long vanished day,
 We will keep the old jacket for sake of the loved one
 Who rode in the van in the ranks of "the Gray."

Shot through with a bullet—right here in the shoulder,
 And down there the pocket is splintered and soiled,
 Ah! more—see, the lining is stained and discolored!
 Yes—blood-drops the texture have stiffened and spoiled.
 It came when he rode at the head of the column,
 Charging down in the battle one deadliest day,
 When squadrons of foemen were broken asunder,
 And Victory rode with the ranks of "the Gray."

Its mem'ry is sweetness and sorrow commingled,
 To me it is precious—more precious than gold;
 In the rent and the shot-holes a volume is written,
 In the stains on the lining is agony told.
 That was ten years ago, when, in life's sunny morning,
 He rode with his comrades down into the fray,
 And the old coat he wore, and the good sword he wielded,
 Were all that came back from the ranks of "the Gray."

And it lies there alone; I will reverence it ever,
 The patch in the elbow, the hole in the side,
 For a gallanter heart never breathed than the loved one
 Who wore it in honor and soldierly pride.
 Let me brush off the dust from its tatters and tarnish,
 Let me fold it up closely and lay it away—
 It is all that is left of the loved and the lost one
 Who fought for the Right in the ranks of "the Gray."

From the Public Ledger.

CRUISE OF THE OLUSTEE.

BY GEORGE W. GIFT.

[CONCLUDED.]

Following us was a heavy flowing sea running after and hoisting the stern of the ship high in the air, and then, as it passed forward, letting her down into the trough, leaving the screws out of water, when the engines would gather a frightful velocity (called "racing"), and as they were again suddenly dropped in the water it would seem as though the whole stern of the ship must certainly be torn out. The strain was simply fearful. But the good craft stood the test, and we soon saw that we were gaining, and as dark was near at hand, we had but little apprehension of real trouble. By midnight the gale had abated and the sea gone down, and as we had no fear of our competitor in moderate weather, we did not consider it necessary to elude him by changing our course, which was shaped for a point off Hatteras, from where we would run back to Wilmington.

We had on board the officers and crews of our three last prizes, with whom we were anxious to part company. At daylight next morning the sea was smooth, and conveniently near was a brig in which we concluded to send away our incumbrances. Accordingly we ran down to her and lowered our boats, preparatory to sending the people away, when, as ill-luck would have it, a steamer hove in sight, and came down pretty near to us before we were ready to start. However, we had the heels of him, as usual, and stood away on our course as unconcerned as though no armed enemy was on our track. This chase lasted the entire day.

At five o'clock in the afternoon we discovered ourselves in a dilemma. In the forenoon we had taken "sights" for the chronometers to determine the longitude; we did the same at four o'clock, and to our astonishment found the two to vary seventy-five miles. Before the discovery was made it was too late to make another observation to determine which was correct. Therefore we were at sea seventy-five miles from anywhere. Dead reckoning would not do to test the observations by, as we had been several days without the sun, and had been influenced by currents and gales. The error had come by carelessness in reading the time off the face of the chronometer. As the difference was just seventy-five miles, we knew that a mistake of five minutes had been made. One party or other had called twenty minutes twenty-five, or twenty-five minutes twenty—but which was right? If the westerly position was correct, the ship could go into Wilmington before daylight; if the other, it would be an impossibility, and we had better haul round the chase and wait for the morrow. Prudence dictated the latter course, and we "hailed round the chase," that is to say, we changed our course to the left one point every five minutes, which would bring us back to the spot we started from in one hundred and sixty minutes, supposing our speed to be uniform. And

as we had run in the meantime about thirty-two miles, it was reasonable to suppose the enemy had passed the point and was many miles from us—clear out of sight if it were daylight.

Having nothing to fear and nothing to do, we banked the fires on one boiler (which had been our custom when not chasing) and steamed slowly around in a small circle waiting for tomorrow's sun. Speaking from memory, I think we were about one hundred and twenty-five miles from Wilmington should the westerly position be correct, or two hundred if the easterly one was right; in any event we felt very safe, as being outside the off-shore line of cruisers, and therefore relaxed much of our usual vigilance; and besides we were all exceedingly tired and weary after the exciting scenes and hard work of the days previous. During the night the chief engineer discovered a slight leak in one of the steam-pipes, and concluded this would be a good time to repair it, and to facilitate his work let the steam down to nine of ten pounds to the square inch.

Thus things were going until about nine o'clock in the forenoon, when our sharp-eyed lookout at the foremast head yelled out, "Sail ho!" "Where away?" "Two points off the port bow." "What do you make her out?" "Steamer, sir, standing to the eastward." Our head was to the westward; hence the stranger was coming from Wilmington. This short dialogue had hardly ended and the slice-bars and coal-shovels scarcely commenced making music in the fire-room before another steamer was discovered, and still another, which seemed to be sailing abreast, and several miles asunder. The first craft occupied the center, and was probably a mile or two in advance. She was a side-wheel ex-blockade runner, British-built, and therefore we would have no easy thing to get away from him, especially with steam down. This was the *Lillian*. She came up above the horizon very rapidly, her wheels flying around, leaving a long line of foam astern. The second vessel, a large American-built screw steamer, called the *Montgomery*, was the left of the line; the third was never near enough to us to give trouble, so we will not notice her.

Our first impulse was to head to the eastward and go as fast as possible, but our best speed was not much; steam was down and it seemed impossible to get it up, for we used it as fast as made. The *Lillian* was coming up with us "hand-over-fist," and the other two were fairly in sight. After the first thirty minutes I judged that we were holding our own, but inasmuch as we had not coal enough to warrant a long run off shore, I favored a change, of course, with the purpose of beaching the vessel as a last resort. Before doing this it was necessary to ascertain our position from the sight taken just about the time we saw the enemy. I undertook the job of working up the observation, and at about the same time the *Lillian* got in range and opened on us. In every operation of adding, multiplying or dividing, I

found the coming shell an element in the calculation. Two and seven made ten oftener on that occasion than on any other I can call to mind. I mistook the secant of the latitude for the co-secant of the polar distance, and got the sines and co-sines all tangled. I was working Sumner's method, which requires a vast amount of figuring, and I thought I should never get through. However, I did get through, and marked the position on the chart, drew a straight line to the nearest shore, got the course from the nearest compass and emerged with my data. To steer this course would bring us in range of the *Montgomery*, as we would turn short on our heel and steer toward North Carolina instead of the Bay of Biscay. Around we came, and around also came our pursuers. The *Montgomery* steered to intercept us and get in range. The *Lillian* was right astern of us, also in range, but her practice was indifferent, while that of her consort was first-rate.

We urged and coaxed engineers and firemen, but still the steam would not come. We sent men into the bunkers, picked the coal of the best size and passed it out in deck buckets. We changed firemen every half hour, and still it did no good. Our men looked anxiously and nervously over the sides at the chasing vessels; they were demoralized—I felt so myself. Up to this time we had no colors set and had kept the guns covered—were playing the part of a runaway blockade runner. We determined to try conclusions with shot and shell. The colors were bent on and run up in a ball ready to shake out, and the drummer ordered to beat to quarters. At the first sound of the rat-ta-tat, stops were broken and our ensign blew out from the masthead. The men hurried to the guns and cleared for action, and in a few seconds we spoke to our pursuers in knightly tones—the cringing hind became an armed warrior.

The effect was marvellous; the men worked with a will at whatever they were set at; the engineers no longer found difficulty with their firemen; the ship herself seemed to be in a better humor. Balls of waste and yarns were saturated with turpentine and thrown into the furnaces, and when we no longer had waste we ladled turpentine into the fires. This and our great gun practice did the business in the way of raising steam. The engineer in charge was a man of judgment, and seeing that we were not losing ground, he kept bottling up the steam and raising the pressure. From the bridge I could look down into the engine-room and see the steam gauge. I saw the indicator crawl up to seventeen, and I saw Mr. Green quietly shut off the steam a little; from seventeen it soon went to eighteen, and still he closed the orifice. She was getting hot and he knew it, and he further knew that when she got hot we would not be troubled for any length of time by the gad-flies buzzing about us.

Our one hundred-pounder rifle was useless on account of the low carriage, but the thirty-pounder did good service, not that we hit the fellows, but we dropped our shot so near them that their people got demoralized, and they

soon showed signs of being tired. The Lillian seemed to drop astern perceptibly as soon as we opened. I think it was near one o'clock in the afternoon before we began to shake off our pursuers; then our boilers had got hot, steam was at a high pressure, and we opened the throttles and commenced altering our course for Wilmington, working around the enemy in a circle, and gaining on him about three miles an hour, or more than our length a minute. At nine o'clock at night we were nearing Fort Fisher, and could just see his rockets above the horizon astern of us.

An interesting feature of this chase was the interest manifested by the prisoners. When we were nearly cornered, with steam down, their spirits were up, but as the steam came up the poor fellows relapsed into the melancholy mood. Our engineers properly claimed our escape as due to their superior skill. The Lillian was our equal in speed, and came into the chase with steam up, yet we distanced her. Could it have been possible to have changed engineers, she would have been alongside us by eleven o'clock; as it was, she was botched. Our chief engineer was a Charlestonian, and his principal assistants came out of the Tredegar works at Richmond. I have not given all the incidents, or attempted to describe this exciting all-day chase in detail. We fell in with a New York and Havana packet, a merchant vessel, which complicated matters against us awhile, and many other things of interest occurred, which I have partially forgotten.

We had picked our time to run out, but now it was any port and any time. Coming out we chose a night without moon, but now that luminary was riding high in the sky, but fortunately occasional clouds partially obscured its light. Our course was shaped to make the land at a point distant about ten miles to the northward of Fort Fisher, and from there run down along the beach, keeping it about two hundred yards distant, with the lead marking three fathoms of water. Our land-fall was excellent, but the shore being very low we were right up to the beach soon after seeing it, and as we changed our course a volley of musketry from a picket warned us that we were near our friends, although they gave us other than a pleasing welcome. Our signal man opened his lights and got recognition at once. Our name was sent down the beach ahead of us by the blazing torches, with the request that the Fort prepare to defend us, and get the range lights ready for opening as soon as we were ready to take advantage of them.

The night was as calm as possible, and the sea as smooth as a mirror, and I think I never saw objects on shore pass astern as swiftly as they did on that occasion. We were flying at railroad speed, and doing it as noiselessly as a person walking on feathers. Running down the beach as we did was the usual tactics of blockade-runners, which was well understood by the vessels blockading, which usually steamed as near the beach as was safe, for the purpose of cutting off or driving ashore the venturesome fellows who dared the blockade. Therefore we

were all eyes on the seaward side, expecting every minute to meet a foe, but at this time we stood to our guns with the purpose to fight, as concealment would no longer avail us, and we were rather eager that some sharp fellow should find us and crawl up and show his light and get a broadside for his pains. But none came. Fort Fisher is abeam, and we haul off to get into the channel, which is very narrow and quite shallow. Our run down has been so rapid that we are ahead of the parties who are in charge of the lights, and signalize energetically, asking to have the channel shown.

In the meantime our pilot imagined that he saw the remains of two steamers which had been wrecked on the spits on either side of the channel, and by steering between them he could go in without the lights, so we pointed in the direction indicated and went ahead, but much to our surprise the vessel struck quite hard forward and stopped. I confess that I thought we were at our journey's end, and what a hard case? to be run ashore and lost in sight of home, to be ruined by over confidence and carelessness was too bad to be borne. The ship would not be saved, however, by repining or growling, so the engines were reversed, and to our great surprise and joy she floated off quite easily, in fact had not been aground, as the bank we had struck was almost perpendicular. As we backed, we discovered one of our tormentors slowly steaming in to look for us; therefore we did not back any more in that direction, but, on the contrary, the range lights having been set, we went ahead in the channel, and there grounded hard and fast and waited an hour for the tide to rise, all the while keeping a sharp eye on the rascal who was prowling about looking for but never seeing us.

As a matter of course, we were anxious and nervous and kept *trying* to go ahead. Finally we made an effort, and the leadsmen called out: "She is going ahead, sir; is all afloat," and five minutes after we passed under the guns of the fort and down the beach to a place of safety, *inside!* Down went the anchor, and the rattling chain and the roaring of steam from the blow-off pipes announced to the wicked that the weary was at rest. In return for some courtesies, an English blockade-runner had sent us a box of champagne a short time before we sailed. This was now opened and we went on a grand spree, in which each party was allowed a gill of wine. Nevertheless we were jolly. Our cruise had been a success, and that was sufficient.

Next day we went up to town to prepare for another cruise, which was never undertaken, on account of the scarcity of fuel and other difficulties in the way. Our consort, the Chickamauga, came in a few days after us, having experienced the same bad weather as encountered by us. Later our ship was dismantled as a man-of-war and converted into a blockade-runner, under the name of Chamellion. After the war she was taken to Japan, where she was wrecked on the Gulf of Yeddo—struck a sunken rock while going at great speed, and immediately went down.

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THE
SOUTHERN

FARM & HOME



MAY, 1873.

W. M. BROWNE, EDITOR.

PUBLISHED BY

BOYLE & CHAPMAN,

MEMPHIS,

TENN.



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Sow one bushel to the acre.

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Sow one bushel to the acre.

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Sow one bushel to four acres.

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Chlorodyne and Magnetic Fluid chemically combined.

The great success of this powerful penetrating Fluid warrants the proprietors in pronouncing it the greatest Liniment extant. It is a penetrating Fluid, which passes immediately through all the tissues, muscles, and to the bone itself. Its action upon the absorbents is not to seal them up, as other liniments do, but to open them and increase the circulation. It is based upon scientific principles for cure or natural restoration of all organic derangements, whether in man or beast.

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This Preparation is intended specially for the Cure of Female Diseases, such as
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And all affections of kindred nature.**

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**WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR,
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THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL
TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA,
WHOOPIING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

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LINCOLNSHIRE RAM.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV.

MEMPHIS, TENN., MAY, 1873.

No. 7.



Farm Work for the Month.

The whole work of crop-making is now upon us, demanding all our skill, industry and attention. Hitherto planting and replanting, subject to all the disappointing and vexatious changes of weather, have occupied our time. We have been engaged in giving the crops "a start." Now that is over, and the entire field of crop-culture lies open before us.

CORN.

By this time, we hope, late as has been the season, that the corn crop has been well plowed, the soil broken and pulverized, the thinning completed, all weeds and grass extirpated, the middles as mellow and clean as any part of the rows, and the young plants growing vigorously and hastening to maturity.

It is not possible to prescribe invariable rules for the future cultivation of the crop. Differences of soil and variations of the seasons may require different work. But we may say that in all cases the earth must be kept loose and clean, and all future plowings done with a sweep or cultivator which will not cut the roots which are pushing in every direction to gather nutriment for the rapid growth of the stalk. The work therefore should be shallower, and not so close as heretofore, but so arranged as to throw fine earth to the plants, smothering all sprouting grass, and giving protection against the increasing heat of the season. The hoe force should immediately follow the plows, completing what the latter failed to do, remov-

ing all surplus stalks, pulling off suckers, and killing every weed and every blade of grass, so that the corn will receive all the nourishment that the soil can yield. Without this care heavy crops of corn are not to be expected. If it be properly bestowed and at the proper time, the crop will need no more work for three weeks, leaving ample time to give all due attention to the cultivation of the

COTTON CROP.

To thin to a stand is the first and most important thing to be done now. When the plants have put on their third and fourth leaves no time should be lost in reducing the crop to a stand, so that the little branches which are now beginning to shoot may have plenty of room to spread. The limbs which bear best and mature their fruit earliest are those which come out first and nearest to the ground, and it is therefore obvious that their growth should never be obstructed. The work of thinning to a stand calls for great care, and should be entrusted to the most skillful and attentive hands. Many a fine crop is ruined by being skinned and bruised by too rapid and careless hands in thinning to a stand. Skilled cotton-planters differ widely in opinion as to the number of stalks to leave in a hill. Some contend that only one stalk should be left, and others maintain that two or three should be the number, arguing that though each of the three stalks will not produce as many bolls as the one stalk left by itself, collectively they will yield at least double the quantity. This is the opinion of David Dickson, and our own experience inclines us to believe that it is correct. We think that if plenty of room is given *between* the rows, the stalks may be crowded *in* the rows, it being enough to give space one way. The richness of the soil and the probable size

of the plants must determine the distance between the rows. On average upland three and a half feet between the rows, and the width of an ordinary hoe between the hills, with from two to three stalks in each hill, will be found to be a safe mode of cultivation.

If the land has been well and deeply prepared before planting, and the first plowing or *siding* has been deep, the after culture should be shallow, merely stirring the soil and keeping it clean. To keep "out of the grass" should be the great aim of every cotton-planter.

SMALL GRAIN.

By the end of this month wheat, oats, barley and rye will be fit for cutting. All grain, except that which is intended for seed, and which should be allowed to become "dead ripe," should be cut before it becomes thoroughly matured. After these small grain crops are cut, a couple of fine days are sufficient to cure them. They should then be threshed out and the grain cleaned and exposed to the heat of the sun for several days, until the grain becomes perfectly dry. It should then be put away in bins or barrels well whitewashed with quicklime. Weevils will never attack grain thus cured.

FORAGE PLANTS.

This is a good time to sow cow-peas broadcast for hay, or to plow under for green manure. Drilled corn and millet may now be sown on good land well prepared. We renew our oft-repeated advice to our friends, to plant as largely as possible of these forage crops. Drilled corn should be sown at the rate of two and a half to three bushels to the acre. The drills should be about thirty to thirty-six inches apart, and the crop should be kept clean with the cultivator. We especially recommend millet. It is astonishing the amount of forage that can be cut from a small patch of millet.

SWEET POTATOES.

As long as the seed-bed yields "slips" keep on planting them out. No crop pays better than sweet potatoes.

PUMPKINS.

This is a favorite Yankee crop, but it will give the best kind of nourishment to the milch cows of Dixie. Pumpkins are easily raised, provided the land be well broken and the hills made rich.

PROVISIONS.

This is the last month in which advice to our friends to raise as many provisions as possible can do any good for 1873. Earnestly do we

give it and sincerely do we hope it will be generally adopted. Turn every available spot upon the plantation to account. Have no waste land which can be used to raise provisions for hands and stock. Use every exertion to secure for yourselves a full smoke-house of home-raised meat, a full corn crib, a closely-packed fodder loft, a large and well-filled root cellar, large and numerous banks of potatoes and bins filled with grain. You may not raise as many bags of cotton as they will, perhaps, who neglect these things, but your pockets will be fuller this time next year than those of the all-cotton man; you will not owe your merchant anything, you will have no crop liens standing against you, and you will be master of your cotton crop. You will have fatter and better stock and more of them than the all-cotton men, you will have better and more contented hands, and you will have less difficulty in procuring laborers when the time comes to contract. And should this be a bad cotton year—should rust, drouth, the worm or caterpillar injure the crop—how much better off will be they who have raised all their provisions and have nothing to buy, than those who have placed all their eggs in one basket, and find them broken!

For the Southern Farm and Home.

The Value of Lucerne for Soiling.

MR. EDITOR—I agree with all you have said from time to time in praise of lucerne. I deem it the most valuable forage crop we can raise. It makes very good hay, but its great value is as a soiling crop, to be fed green. The most experienced stock-raisers and agriculturists believe that green food is more nutritious than dry food, and that lucerne and clover lose nutritious matter when made into hay. A skillful French agriculturist made the experiment and found that 9 pounds of green lucerne were equal in feeding sheep to 3 3-10 pounds of lucerne hay, while 9 pounds of green lucerne will only yield 2.02 pounds of hay.

This is a very great advantage, but it is not the only one which results from soiling. The expense of curing the hay is saved if the crop is fed green, and besides this all risk of loss from bad weather is avoided. I attach great value to lucerne, but I think it should be fed in a green state. I would only make lucerne hay if I had more than I could feed to my stock.

LUCERNE.

April, 1873.

*For the Southern Farm and Home.***Letter from John Plowhandles.**

MR. EDITOR—If we look over all the Southern States—I refer exclusively to those which are known as “lately in rebellion”—and examine the condition of the people, I believe that we must come to the painful conclusion that our material prosperity has not increased since the close of the war; in other words, that we are hardly better off to-day than we were when, after our wretched journey from Appomattox Court-house and Greensboro, we reached our homes as paroled prisoners in 1865. We have toiled and moiled during all these eight years, we have been industrious and borne our reverses like men, but where are the fruits of our industry? In eight years, if we had pursued a proper system, we ought to have increased our wealth and restored our prosperity. We had the brains and the muscle, the land and the seasons, and no country in the world is as productive as ours. We have made millions upon millions of bales of cotton in that time. Taking the average price during the eight years, we have received a handsome sum for our cotton, amounting to several hundred millions of dollars; yet, I repeat, examine the cotton States and the condition of their people, and where do you find any evidences of prosperity such as these immense receipts would justify you in expecting? Our farm buildings are more dilapidated and discreditable than ever; our fences rotten and valueless; our stock fewer in number and of poorer quality; our corn cribs empty and our people buying corn and hay on credit in March to make the coming crop; not a side of home-raised meat in our smoke-houses, not a barrel of flour, not a gallon of molasses, except what we have bought from our merchants at ruinous rates of interest; not a mule or horse that is not imported; and everything that we wear and use made in Yankeedom and sold to us at immense profits in return for our raw cotton, which is bought from us at whatever price the Yankee consumer chooses to pay. Where are our manufactures? When you do find a cotton mill, a foundry, or a factory of any sort, it is mainly owned and controlled by foreign capital. Look at our banks. Yankees own and run them to a great extent. Look at our railroads in the hands of the Tom Scotts and Stantons and Goulds, who use our bonds indorsed by our States, and on which we pay the interest, to build the roads and run them to

the advantage of the Yankee rings and speculators. Nay, more; our houses, our property and our lives are insured for the most part in Northern companies, who do us the honor to take our money and repudiate their obligations whenever it suits them, as our sad experience taught us during the war. Where do you hear of a Southern ship? Where can you find a vestige of strictly Southern commerce? Of what good, then, have been the millions we have received for our cotton if we have nowhere any of the usual evidences of prosperity? If we were prosperous, our water-courses from their sources to the sea would not be as bare of improvement as the day they came fresh from the hand of the Creator. We should be unable to travel far out of the sound of the spindle, the loom and the hammer, instead of being able, as now, to travel for days without the ear ever being gladdened by any of these sounds of popular industry.

Again the question returns, what has become of the hundreds of millions of dollars we have received for our cotton? They are gone out of the country to pay for the articles we have eaten, drank, worn and employed for every farm and domestic purpose, most of which we have bought on credit and paid for with interest at the rate of forty to fifty per cent., and all of which we were compelled to buy because we devoted all our land and time and labor to raise cotton to the exclusion of every one of the necessities of life. Here is the cause, sir, of our poverty; this is the reason why we are not prosperous. We make every effort, spend every dollar we own and every one we can borrow, even at usury, to make a big crop. We make it, and find after it is sold that we are poorer than before. Does the experience prompt us to change our course and act differently the next year? No; the only effect produced is to stimulate us to still greater effort to make a still bigger crop, and find ourselves again poorer than at the end of the first year's disastrous experience. We shut our eyes to the great economical facts that by producing an excess of cotton we necessarily reduce its price, and that by producing none of the necessities of life we increase their price, and thus impoverish ourselves. Misgovernment, stupid legislation, and the corrupt myrmidons of the Washington administration have stolen and wasted our substance to some extent; but bad as these have been, they are not responsible for all our ills. Our own folly is mainly responsible. And, Mr. Editor, as I write this

second day of April, I know that the area to be planted in 1873 will far exceed that of 1872, and that the amount of provisions raised in the Southern States this year will be far less than that raised last year. While we follow such a crazy course how can we expect prosperity? We will pursue the cotton will-o'-the-wisp so long as we can find the means to do so. When our means are totally exhausted, then, and then only, shall we discover that we have erred. There are exceptions. There are wise planters who prosper. But they are the few—like angels' visits, "few and far between." I write of the mass, and write sad truths.

Yours respectfully,
JOHN FLOWHANDLES.

For the Southern Farm and Home.

Carrots for Stock Food.

MR. EDITOR—Allow me a little space in your valuable paper to recommend to our farmers carrots as a first-rate food for stock. They are easily and inexpensively raised, produce largely, and are as good food for work-horses and mules as corn. In England, where the working animals on the farms are kept as sleek and fat as it is possible for them to be, carrots are very largely used, either by themselves or mixed with grain. They possess a tonic quality which is much prized. Those splendid dray-horses which one sees in Liverpool and London—the finest draft-horses in the world—are largely fed on carrots, and the French Percherons which used to be seen in the old diligences, were also fed in this way. There is still plenty of time to raise a good crop of carrots. Indeed, except for early vegetables in a garden, I should never plant carrots until the ground has become thoroughly warm, so that the seed will germinate quickly and grow off rapidly. Manure the ground heavily, either with well-rotted stable manure or some good ammoniated superphosphate. Bed it up in beds two feet apart, breaking the ground as deeply as possible. Sow the seed with a planter which opens the furrow, sows the seed and covers lightly. Take care that the top of the bed is well pulverized and free from stones and clods.

When ready to plant soak the seed for some time and leave them in the kitchen or other warm room until they are almost ready to germinate. Then spread them out to dry, and when they no longer stick together they are fit to plant.

They will come up in a short time, and when they are well up along the rows stir the earth around them with a hoe, destroying all the weeds. Thin to the proper distance, say eight inches apart, and keep down the weeds, and the result will be, if the foregoing directions are followed, a large crop of fine carrots.

ECONOMY.

April, 1873.

[REMARKS BY THE EDITOR.—We cannot agree with our correspondent as to the importance he gives to carrots as a food for horses. We have known many persons who agreed with him, but always regarded their opinion of the nutritious qualities of carrots as exaggerated. Horses are very fond of carrots, but that does not prove that they are nutritive. In the best analysis of the comparative values of different sorts of stock food, 350 of carrots are found to be only equivalent to 100 of good hay. As an alternative carrots are found to be of value for horses. They make the coat sleek, but as a permanent food we do not think that they are to be recommended.]

For the Southern Farm and Home.

Spreading Manure.

MR. EDITOR—Doctors differ widely as to the proper mode of spreading manure. Some carry it out as they gather it and spread it during the winter over the surface of the fields, and leave it thus exposed to the weather until they are ready to plow it under in the spring. Others object that by this exposure the manure loses all its volatile elements, and that its soluble ingredients are washed out by the rain and carried away. These maintain that manure should only be spread just before plowing it under; and as all agree that the slow and tedious process of hauling out manure to the fields to which it is to be applied must not be delayed until the hurry of the spring work, but must be done during the winter, it is said that the proper way is to deposit it in large heaps in the field and to spread it only just ahead of the plows.

This is the point to which I strongly object. I am of opinion that manure should not be left in large heaps in the field. The places where these heaps have been made are too strongly manured and the crop is too rank; and, in addition to this, the manure has to be twice hauled before it is spread, making the labor very expensive and tedious. I advocate spreading when it is hauled out, and hauling

out during the winter when the weather is cold. If plaster be mixed with it, as should be the case in every well made manure heap, the loss of ammonia by exposure will be very small, and as to the soluble parts, the rain will carry them into the surface just as in the case of a top-dressing. Nobody denies the value of top-dressing, or objects to it that the manure loses its properties by exposure to the weather. In many countries where the largest grain crops are made, the manure is applied to the growing crop, not before the seed is sown.

Many Southern farmers neglect to gather manure, because they find it almost impossible to haul it out in the spring, and fancy that if they haul it out in the winter and spread it as they haul it, it loses all its valuable properties by exposure. This is the error I desire to explode. I want our farmers to gather all the manure they can, to haul it out during the winter and spread it, and if they use land-plaster liberally in making the manure pile, it will not lose any of its strength.

My attention was specially directed to this subject by seeing recently a good-sized pile of good manure near the stable-lot of a friend, which he said he was unable to haul to the field from want of time. Had he hauled and spread it during the winter, he would have doubled his crop. All the greatest authorities on farm economy, including Boussingault and Thaer, recommend carrying out the manure during the winter and spreading it, even though it be upon snow. EXPERIENCE.

April, 1873.

For the Southern Farm and Home.

Summer Fallow.

MR. EDITOR—Why do you not make any mention of summer-fallowing land among the means which you recommend for renovating the worn and exhausted lands of the South? It is one of the best renovators within the reach of the farmer, and yet it is rarely or ever employed. Most of the lands which are "turned out," because they have been utterly exhausted by surface-plowing and continual cropping, might by this process be restored to comparative productiveness. Of course, where thorough cultivation of the soil and a judicious rotation of crops are practiced, there is no necessity to lose the use of the land for a year by summer-fallowing; but where the land has been worn out by the skinning process, there is nothing better. The constant scratch-plowing for a number of years, especially on stiff

lands, has made the hard-pan which lies between the surface and the subsoil as completely impervious to air, light, heat and moisture as if it were covered with stone flags. This hard-pan must be broken and a portion of the subsoil brought to the surface and exposed to the action of the atmosphere. The next plowing should go a little deeper, bringing up a little more of the subsoil, and the third working with a gang-plow or a heavy revolving harrow which would thoroughly mix the surface and the subsoil together, would complete the process. This frequent stirring of the soil, the admission of air, light and moisture, and the influence of the atmosphere upon the subsoil, will, during a summer, restore the productiveness of an old field to a great extent, and prepare it for profitable use during the following year. I have tried it and can speak advisedly. It costs some labor, but that is all. It is far cheaper than a commercial fertilizer at "\$75 per ton for cash, and \$85 on time, with factor's acceptance."

JONES.

MONROE COUNTY, GA., April, 1873.

For the Southern Farm and Home.

Sheep-Raising.

MR. EDITOR—I have seen several articles in your popular monthly in which you and your contributors strongly advise Southern planters to engage in sheep-raising as a profitable industry, and you seem to recommend the merinoes as the most desirable breed. This, in my opinion, should depend a good deal on the locality of the planter, and whether his object is to raise sheep for wool or for mutton, or for both combined. If the former, I think you are right about the merinoes. Their yield of wool is large, they are hardy and good foragers, but they do not mature early, they are not very prolific, and their meat is not the best. If the object be to raise mutton, the Southdowns are the sheep of all others. They are very prolific and they mature rapidly, but they are not good wool-producers.

If the planter lives near a large town where he can find a ready market for his wethers and lambs, the Southdown is the sheep to be preferred; but if he lives at a distance from a market or remote from a railroad, he would find the merinoes more profitable, and should raise sheep for wool.

In either case, situated as the majority of Southern planters are, not overburdened with ready money, they should not, as you remark very truly, attempt to begin sheep-raising with

a pure-bred flock of either kind. The way to do is to buy some good, well-formed and large country ewes, taking care that they are young and have been well kept, and for every forty, or at most, fifty ewes, to buy a pure-blood merino or Southdown ram, the best he can get, and not over two years old. Let no one ever buy or use a grade ram, however finely formed or attractive he may look. I have seen a grade ram, who was a perfect beauty in appearance, breed the veriest runts you ever saw. After three or four crosses, always changing the ram so as to avoid breeding-in, an almost pure-bred flock will be obtained.

As we are all novices in sheep-raising, my advice is to begin on a small scale. I would not recommend a larger flock than a hundred at the outside. If these are well kept, well fed and sheltered, and judiciously managed, they will increase very rapidly and will pay a very handsome per centage on the capital and labor invested. G.

MAURY COUNTY, TENN., April, 1873.

For the Southern Farm and Home.

Green Manuring.

MR. EDITOR—I hope that all of your readers who are farmers will take your advice as to green manuring during this year. Now is the time to begin. Sow the common cow-pea broadcast and thickly, plow them in, covering up all the vines, when they begin to form their pods, and sow peas broadcast again, and before frost plow them under like the first crop, sprinkling them thickly with lime at the rate of twenty or thirty bushels to the acre. The land will thus have received two heavy coats of the best sort of manure, and will be as mellow as an ash bank for cultivation in the spring. I do not regard the pea as at all equal to clover as a fertilizer, but it will grow on land where clover would not sprout. By the use of the pea plowed under as green manure, poor land may be made rich enough to produce clover, and clover once established the land is permanently enriched, for I regard clover as the very best fertilizer that can be applied to the land for the crops we raise, and not only the best fertilizer properly so-called, but the best ameliorator of the condition of the soil. When a field is well set in clover, the roots have subsoiled it much better than any plow could have done it. But clover will not thrive on poor land. Indeed it will not grow at all. It is necessary to prepare the land and enrich it,

and then sow the clover. I know of no way to make this preparation, and at the same time enrich the land, as good as by plowing in crop after crop of green pea-vines, well limed, to hasten decomposition and supply a necessary mineral food for the clover crop.

The agricultural chemists have fully demonstrated that cow-peas or clover plowed into the soil in a green state will enrich it, because they contain all the fertilizing elements that our crops need, viz.: silica, alumina, lime, magnesia, oxide of iron, oxide of magnesia, potash, soda, oxygen, hydrogen, nitrogen, carbonic acid, phosphoric acid, sulphuric acid and chlorine. Red clover contains these in far larger proportion than the cow-pea, but the latter does contain them, and is consequently a most valuable manure. The best agriculturists of the old world and of America place the highest value on green manuring, and many prefer it to animal manure.

Let us begin in earnest to redeem our lands. Before we talk about moving to a new country because our lands are "worn out," let us try to restore them by green manuring. We can begin gradually manuring a few acres every year in this way, and sticking to it until we have carried out the remedy as prescribed.

A DISCIPLE OF VAN THAER.

For the Southern Farm and Home.

The Use of Lime as a Manure.

MR. EDITOR—I see many inquiries in your paper and in other agricultural papers as to the use of lime as a manure. I rejoice to see the spirit of inquiry spreading among our people. It gives the cheering hope that we are beginning to think, and that we find that progress is essential to success.

I can appreciate the troubles of my brother farmers about the use of lime, for I remember well when I was in their situation, and had to plod along and work out the problem for myself. I think I understand it pretty well, and if you will allow me I will give a short account of "what I know about" lime, which may be useful to others.

As a manure lime is of value for two things, namely, to work chemical changes in the soil and to supply the amount of mineral matter necessary for the growth of the crops. In lands containing a large amount of decaying vegetable matter or humus, there is rarely a sufficient quantity of lime, and these are the

lands where it may be used to advantage, while on dry, sandy soils, containing little vegetable matter, it is injurious rather than beneficial. Again, in lands where the water lodges, lime is utterly useless without under-draining, but if it be drained and the ground aerated so that it will readily assimilate the alkaline material, it will effectually remove that sourness of the soil which renders it unproductive. The lime acting upon the organic matter in the soil, abstracts silica and forms silicate of lime, while the other constituents being set free by the removal of the silica, quickly disintegrate and decompose. The quantity of lime to be applied per acre, on land where it will be beneficial, should depend upon the acidity of the soil and the amount of humus it contains. The English practice of applying from seventy-five to one hundred bushels of lime per acre, and making the one application do for a number of years, would not answer on our lands. I think from five to ten or fifteen bushels per acre, applied annually and in the fall for a number of years, is the most desirable mode of liming our land. Unless the land be very full of organic matter and the acidity very evident, I should recommend that the lime be slaked. On lands where the organic matter is abundant and the growth indicates sourness, quick-lime is the best.

There is generally to be found in all soils a sufficient amount of lime for the nourishment of plants, that is, to supply the mineral matter necessary to the growth of plants. Different crops need different quantities of this nourishment, as may be seen from the quantity of lime which they have been found to take out of the land. For instance: An acre of wheat contains 8 7-100 pounds; of barley, 15 pounds; of turnips, 138 8-100 pounds; of potatoes, 266 pounds; and of clover, 126 pounds. For those crops which take up the largest quantities of lime as food, a larger proportion of lime in the soil is necessary, so that they may find it readily for the sustenance of those parts to which lime is essential.

I know that my views are not sustained altogether by the writings of very renowned agricultural chemists who recommend very big doses of lime, and who pile it on to wet lands; but though my chemical knowledge may be defective my practical experience is not, and I am one of those who believe that an ounce of approved practice is worth a pound of untried theory.

DIXIE.

CHESTERFIELD Co., VA., April, 1873.

For the Southern Farm and Home.

European Agriculture.

MR. EDITOR—I promised you, in conversation, when I met you on the cars, a few weeks ago, to jot down for you some of the reasons which I gave you for the superiority of European agriculture over ours, as evidenced by the larger yield per acre in Europe than in this country.

The great secret, if it can be so called, is that in Europe an abundant supply of animal manure is the *sine qua non* of agriculture. No man, be he proprietor or lessee, can afford to farm poor land, and therefore whatever the land he has, he makes it rich. He therefore keeps stock enough to furnish a sufficient quantity of manure for his crops, and rarely uses a commercial manure of any sort except as a stimulant and on his *best* land. A large portion of every well-managed European farm—frequently as much as half of it—is in grass for meadows and pasture and in forage crops for the use of the stock, clover and lucerne being chief among the latter. These are generally cut in a green state and fed to the stock and sheep in stables or in folds. Thus a sufficient number of cattle and sheep are kept to furnish all the manure that is needed for the grain and other crops, and as the produce of the dairy and the sales of cattle, sheep and wool more than cover the cost of their keep, the manure is clear profit, for use on the crops, which are thus very large and very profitable. The dense population and the necessity imposed on every man to make the most of the land he has got, for he can never “clear a new ground,” compels an attention to manure-making on the largest scale and at the least cost. The same necessity has not heretofore existed in this country, where land is abundant and cheap, but now that we are compelled to stay at home, and can no longer afford to move off as soon as we have exhausted our land, we too must see to making our lands more productive if we would escape from poverty. We must place more value on manure and only plant as many acres as we can enrich, so as to secure the maximum of production at the minimum of cost, and therefore, on the fewest number of acres. To do this we must keep stock—cattle and sheep—to make the manure, and to keep the stock we must have pastures, meadows for hay, and an abundance of forage, root crops and small grain. This is a “revolution in our farming,” if you will, and as you

remarked, one in which our people will be slow to engage, but we will have to come to it, and those will be best off who come to it soonest.

You are quite right in all that you say about the advantages of sheep-raising. It is the least expensive, demands the least capital to begin, and is the quickest renovator of land that I know. It is peculiarly adapted to the South, and would, if generally and judiciously adopted, not leave an unproductive acre of ground in a dozen years from now.

I may avail myself of your kindness to write again upon this subject in future numbers of the FARM AND HOME.

April, 1873.

FLANDERS.

For the Southern Farm and Home.

Hop Culture.

MR. EDITOR—I have no doubt that the culture of hops could be made one of the most profitable industries in the South. Hops are grown on a large scale in Wisconsin and other Northwestern States and yield handsome returns, and as the Southern soil and climate are better adapted to their culture, it is plain that they could be raised more successfully here.

The cost of planting a hop garden is about \$20 per acre. This includes the cost of the best "English cluster" plants and of planting them out. The poles to train the vines, which must be placed the second year, will only cost the time and labor of cutting, hauling and setting up. The after-cultivation is inexpensive and easy, and a hop garden once established will last for fifteen or twenty years without requiring any further outlay.

The average yield is 1500 to 2000 pounds per acre. The average price is from forty to fifty cents. Take the lowest figures and it will be seen that the gross value is \$600 per acre. Deduct the cost of cultivation, picking and curing for market, which will not exceed eight cents per pound, and you have a net profit of \$480 per acre. This beats cotton all to pieces. The United States are now very heavy importers of hops. Not more than a third of the quantity consumed is grown here. The other two-thirds are bought abroad and paid for in gold. There is no danger therefore that the supply will exceed the demand.

In the figures which I have given above I have taken a very low estimate both of the yield per acre and of the price per pound. For the last three years the market price of hops at the garden has never been lower than

fifty cents, and last year it was fifty-six cents. It seems to me that the experiment is worth trying. I have grown in my garden as fine hops as any raised in Kent, therefore I know that they will succeed in our climate.

HOP.

GREENE Co., GA., April, 1873.

For the Southern Farm and Home.

Soiling Stock.

MR. EDITOR—In your articles presenting to your readers the advantages of soiling stock—of which, let me remark, I strongly approve—you have never mentioned one advantage, which I think very great, and which all will admit when it is presented. I allude to the comfort of stock which are stabled in good, airy and well-ventilated stables during the long, hot days of summer, shaded from the heat, protected against flies, and enabled to eat their food in comfort. We all know that during the hot hours of the day in summer, cattle turned out to pasture will seek the shade, and that they will leave their food to find shelter from the heat and the insects. We may therefore conclude that if we were to supply them with plenty of green food and water in a cool, clean stable, they would enjoy it more and thrive better than if we should turn them out to forage for themselves under a burning sun and among swarms of flies. Besides we also know that when the weather is hottest our pastures are always the barest and least nourishing. It is very rare to find a pasture in our country which in July and August will supply stock with the food they ought to have. It stands to reason that stock exposed to a vertical sun, forced to roam over acres of ground to find a few mouthfuls of succulent herbage, and pestered by all sorts of insects, will not thrive as well as those that are sheltered and have plenty of food.

You have already demonstrated that by soiling you can support stock with less land and less expenditure for fences than where pastures are the sole reliance, and you have also shown the great advantage in the vast increase of the manure pile, and in the greater abundance of the crops. But I desire in this communication to refer to the greater thrift of stock which are soiled in summer as compared with those that are turned out to shift for themselves in those fields which by an effort of imagination we call pastures.

I suppose when our farmers have tried and found the benefit of lucerne, millet, drilled

corn and clover, they will take the next step and soil their stock. I hope that the day may not be far distant when these excellent crops may be raised on every farm, and when cattle "turned out to pasture" in the dog-days may nowhere be seen.

G. J. B.

SUMNER COUNTY, TENN., April, 1873.

For the Southern Farm and Home.

Drilled Corn for Forage.

MR. EDITOR—Let me say a few words for this valuable crop. We have, as a general thing, mighty little surplus cash this year, and the credit of many of us will barely suffice to procure us advances to buy the supplies we cannot raise in time to make this year's crop. We have not a dime to spend for northern hay and our fodder stacks are not very numerous. Our mules and milch cattle are scared to death that the fodder will give out before pulling time comes again, and they have no faith in what we call our pastures. They know how it is themselves. We can get over the difficulty and calm the reasonable anxiety of the plowstock and the cows, by making one or more plantings of drilled corn so as to have a succession, which will come in just as the fodderstacks will have "done guv out," and when the pasture is the least nutritive. Sow in drills three feet apart, three bushels per acre, and give it a good plowing and one or more workings with the cultivator. Sow only on good land, and do not grudge a little manure to help the land along. Those who try it will try it again, and the mules and cows will be so very grateful.

SPRING HILL.

April, 1873.

For the Southern Farm and Home.

Hooks in Horses.

MR. EDITOR—"John Plowhandles" is quite right in saying that we are woefully deficient in knowledge of the veterinary art. We are so ignorant of the diseases and their treatment of animals that we frequently practice the most useless cruelty in our efforts to cure a sick animal. I saw an instance of this the other day at the house of a friend who had a horse with an inflamed eyelid, which he persisted in calling the "hooks," and which he said could only be cured by cutting away the inflamed part of the eyelid. I tried to persuade him that the protrusion of the *haw*, or third eyelid, with which horses are provided to keep the eyes clean, was the effect of cold and inflammation

and not the cause of any ailment, and that the proper way to cure it was to reduce the inflammation by soothing applications, cooling diet and bleeding. I endeavored to show him the beneficent purpose of nature in giving the horse this third eyelid, and that to cut it away because it was inflamed from cold was quite as senseless and cruel as it would be to cut off a horse's hoof because he was foundered. He thought he knew better than I did; that he knew "when a horse had the hooks when he saw them," and that nothing but the knife could cure them. I did not wait to see the act of cruelty performed, but I know it was done after my back was turned, and that a fine horse was thus maimed forever through the ignorance and stupid prejudice of the owner.

I could not persuade him that there is no such disease as "the hooks," that every veterinarian of any standing denies its existence and denounces the common error in regard to it. He said he knew better, and got quite angry when I told him that were there a society for the prevention of cruelty to animals in the neighborhood, he would be punished.

A FRIEND OF THE HORSE.

For the Southern Farm and Home.

Subsoiling.

MR. EDITOR—If all our farmers could be induced to realize the value of subsoiling, and to utilize their knowledge, this great country would instantly bound forward in the road to wealth and power. A man's possessions extend "from the zenith to the nadir," not terminating three or four inches under ground, as many seem to suppose. There is great wealth in our land, if we will but develop it. The roots of our crops will go as deep as the ground is thoroughly broken, and no deeper, be that two inches or two feet. Last summer we planted a field of corn with the usual shallow plowing, with the exception of about an acre, in which the ground had been broken to the depth of about fifteen inches. The result in favor of the deep culture was most gratifying—most astonishing. Twice the cost of the extra plowing expended in fertilizers could not have paid half so well.

Do n't say "you can't;," you can. Commence plowing early, so as to secure plenty of time. If you cannot secure the Brinly subsoilers, or some other good implements, make them. Take a bar of iron one inch thick, two inches broad and about two feet long. Make

a suitable point on one end, and insert in a strong stock, much as you would a common coulter, and you have an excellent subsoil plow at but a trifling cost.

England, with her five hundred steam plows, tearing up the earth to the depth of three feet, is thoroughly demonstrating the immense profitability of deep culture. Let the ground be plowed sufficiently deep before planting, and a few weeks of dry weather in the summer will not produce a drouth—there will be no drouths.

The underlying clay can be converted into soil. The air we breathe is surcharged with the pabulum of plants. It permeates the earth as deep as it is broken, depositing its fertilizing gases, and gradually converting it into mold. The *subsoil* is thus converted into soil, which, with the moisture which the lower loosened earth always contains, invites the roots downward.

Subsoiling will yield a handsome percentage on the outlay the first season, besides permanently improving the land. Don't try to farm without subsoiling; you can't afford it.

SUBSTRATUM.

DENMARK, TENN., April, 1873.

For the Southern Farm and Home.

Saving Clover Seed.

MR. EDITOR—You have, I doubt not, heard very often from your friends and acquaintance that they have tried to raise clover and failed, and that "clover will not do in the South." There are many good reasons why their attempts to raise clover have failed, although none of them are proof that "clover will not do at the South;" but one of the chief reasons is that they have bought and used bad seed. The adulteration of clover seed by unprincipled dealers is unfortunately too common, and a large portion of the seed sold is absolutely worthless, being frequently too old, or mixed with cheap imitations. To such an extent was this iniquitous traffic carried in Great Britain, that a special law was passed making the adulteration of seeds a serious criminal offense. Honest seedsmen will sell none but genuine seed, but we do not always deal with such. If the dishonest dealers send us a clap-trap circular or a bumper offering to sell us seed for a few cents less than we can buy them from an honest man at home, we too often give the order to the bumper, and find out when too late that we have been sold.

If those of us who raise clover would only take the trouble to save the seed, they would in a great measure cure this evil and at the same time reap a very handsome profit for their labor. They could find a ready market and remunerative prices for every pound they could save. It is true that it takes care and time to save clover-seed, but what is there that pays well that can be done easily? When the greatest amount of seed is ripe, which can be judged from the dark, almost black color of the heads, the clover should be cut. If it is cut too soon, the seed are not good because they are immature, and if it is cut too long after it has become ripe, a large amount of the seed is lost, by being shaken out in cutting and handling.

The crop should be cut with an ordinary grain-cradle when a mowing machine is not to be had. It should be thrown into double swaths, two lands to a swath. In fine weather it may be left out for four or five days and then raked into bunches while the dew is on it, and lifted into the wagon by a hay-fork. If the weather be wet the clover should be frequently turned and not hauled home until thoroughly dry. When in the barn it should be threshed with a machine or a common flail and cleaned with a fan. But where the farmer has not a regular clover-fan he can clean his seed very well with sieves, one coarse enough to allow the seed to pass through, retaining all the larger seeds and trash, and another so fine as to retain the seed but allow all smaller seeds to pass through. This is for preparing seed for market, but where the producer intends the seed for his own use or for that of his neighbors, it is unnecessary to clean it. It is better to sow it in the chaff, sowing five or six bushels to the acre instead of sixteen pounds of cleaned seed. A good crop of clover will yield from four to five bushels of clean seed. At the present price of clover-seed this will pay well for the trouble, apart from the consideration that our brother farmers are enabled to secure genuine seed and find that clover will "do at the South."

As the season is approaching when clover-seed should be saved, I thought it might be well to make the suggestion, and thus escape the bumpers and their spurious mixtures.

TRIFOLIUM.

DAVIDSON Co., TENN., April, 1873.

[REMARKS BY THE EDITOR.—We agree with our valued correspondent in all that he sug-

gests, and think that home-raised seed carefully saved and well-cleaned would be a great benefit to the public and a very remunerative crop to the producer. Good, sound seed, entirely free from adulteration, can be secured with perfect certainty from R. G. Craig & Co., of this city. They have nothing to do with bummers, and are quite incapable of deception or fraud.]

For the Southern Farm and Home.

Hostile Advice.

MR. EDITOR—It is said that it is lawful to be taught by an enemy. At least so says the Latin maxim. It may be lawful to be instructed in this way, but I prefer any other school teacher. When one whose interests, to say nothing of his prejudices, are antagonistic to mine gives me advice, I always look out for a mouse in the meal tub, and what is more, I generally find him, and the more earnest the advice and the more emphatic the assurance that it is given from no other motive than affectionate interest in me, the more suspicious I become, and the less inclined I am to adopt it.

A few days ago, I read in a Northern paper a long and labored letter, giving a great many figures and no end of statistics, the object of which was to show us of the Cotton States that we should devote all our land and time and labor to the production of cotton and buy all our provisions and everything else we need from our Northern friends, because we can raise cotton and they cannot. We are told that we should not divide our energies; that our soil and climate are the very thing for cotton, but not at all suited to corn or provision crops; that fertilizers pay prodigiously when applied to cotton, but are very unremunerative for corn, &c.; that an acre in cotton will bring \$100 cash, while an acre of grain, hay, potatoes, &c., will not bring more than about \$15 worth of food; that cotton does not exhaust the land, while the food crops ruin it; and then we are told that cotton is such an "interesting" crop, that it is so beautiful, that it is so easily worked, "by the least efficient force of the plantation, and then, that it is *"the gentleman's crop!"*

Now all this is as clear as mud. No one so dull as not to see that to raise an acre of anything but cotton would be a waste of land, of fertilizers, of labor and of money, and that besides the outrage on the aesthetics by substituting hideous corn, wheat, oats or clover for beautiful cotton and abandoning an inter-

esting crop which can be raised by "the least efficient of the plantation force," we should be giving up "the gentleman's crop" *par excellence*, and adopting one only fit for the most abject of boors. This advice has, of course, nothing to do with the fact that New England wants a plenty of cheap cotton, and that the more raised the cheaper it will be to the Yankee spinner. Nor are we advised to buy everything we need to eat, wear and use at the North, because the necessary consequence is that we must send back to the North every cent we get for our cotton, and have to run in debt besides. The man who wrote this letter, giving this advice, must evidently be disinterested. "We know he is a friend, from a remark he made."

I once heard of a cavalry officer who was sent with his company to attack a party of Indians in Texas. When he reached the place where the Indians were supposed to be concealed in some thick underbrush, he dismounted his men and told them that "some men are good for one thing and some for another. I am good for holding horses. You are good for fighting; go in and kill the last one of the Indians." He was di-interested, of course, and as the probabilities are he is alive yet, and perhaps owns a cotton factory in New England, he may be the very man who recommends us to plant all cotton and buy from him and his friends everything we want.

But I object. I want to hold the horses awhile.

J. R.

BALDWIN CO., GA., April 5, 1873.

For the Southern Farm and Home.

Farmers' Union.

MR. EDITOR—I see a great deal written lately about the necessity for co-operation and union among farmers, and the good they will do to themselves by coming together more to interchange views and concert plans for their protection.

With most of this I agree fully. I am a strenuous advocate of farmers' clubs, and I am so because, in my humble judgment, an energetic club will accomplish all the objects enumerated above.

If the farmers of this country would only unite and pull together, they could control its legislation and restore its prosperity. They could pass a dog-law, and render sheep-raising a profitable industry. They could pass a fence-law and save themselves millions of dollars

annually. They could protect themselves against the arbitrary impositions of railroads and other oppressive monopolies, and they could reduce taxation and secure an honest and intelligent administration of the people's money. In every State of the South the farmers are numerically, intellectually and socially, the most influential class. All they want is union, a common purpose and combined effort to attain it. The neighborhood clubs, the county agricultural societies, the State societies, should be the primary meetings, the conventions and the congress where the needs of the agricultural interests could be discussed, and measures devised for their protection and promotion, and action taken to carry these plans into effect. All other trades and callings have their leagues, associations and societies wherein their respective interests are vigilantly guarded, and why should agriculture be an exception? Every neighborhood should have its club, including every farmer in the neighborhood. Every county should have its society, made up of delegates from the neighborhood clubs, and every State should have its association, composed of representatives from the county societies—all working in concert and with energy, meeting regularly and discussing all questions involving the interest of the farmer. I am no friend of the "rings" which now rule and ruin our unhappy land; but I go in with all my heart for a farmers' ring which will enable the honest and industrious to drive the thieves out of the temple, and restore the prosperity of the whole country.

PLAIN FARMER.

LOWNDES COUNTY, MISS., April, 1873.

For the Southern Farm and Home.

Experiments.

MR. EDITOR—Allow me to suggest through your columns a few experiments which the members of agricultural societies might make during this year with advantage to themselves and their country.

1. What is the best, cheapest, and most easily raised of the various forage crops, with a view to soil, climate and nourishment of stock?

2. What root crop is the best suited to the South as to yield, cost of production and keeping qualities?

3. Which are the best, most labor saving and suitable implements for the preparation and cultivation of crops, reporting at same time which may be classed as "humbugs?"

4. Which is the best way to apply fertilizer, broadcast or in the drill, deep or shallow?

5. Whether rice can be raised successfully and profitably on uplands?

6. What is the best way to cure drilled corn for forage?

7. How should stock be fed, what are the best sorts of food, how they should be prepared, and in what quantities they should be fed?

8. Is soiling cattle or turning them out to pasture the better and more economical plan to keep stock in summer?

If a few practical men in every club would conduct these experiments and faithfully report the result at the end of the year, a mass of useful and reliable information would be gained, which would be worth all the theories in the world.

The results of such experiments for one year only might not afford exact information, but they would approximate it, and would give a safe basis for future inquiry.

EXPERIENTIA DOCET.

BARBOUR CO., ALA., April 7, 1873.

For the Southern Farm and Home.

Premium for Best Plowman.

MR. EDITOR—Allow me a small space in your columns to urge on our Agricultural Societies to offer liberal prizes at the fall fairs for the best plowmen, "without distinction of race, color or previous condition." We need good plowmen very much. They are very scarce. It was always difficult, even before "freedom broke out," to get good plowing done, and now it is next to impossible. The basis of all good farming is good plowing—deep, close, even breaking of the soil. With such preparation of the land, droughts lose all their terrors, without it, good crops are not to be expected. Therefore, it is the most important part of farm work, and the greatest encouragements should be offered to induce men to excel in it. The Agricultural Societies can do much in this direction by large prizes for the best plowing, and by making the plowing match a very prominent feature of the fair. If the sum of money for prizes is limited have less racing and trotting, do away with the balloon ascensions and the ground and lofty tumbling, and devote the money to a plowing-match, which will excite the energies of the men who plow. I hope that you and other agricultural editors will approve my sugges-

tion, and if so, that you will aid me in urging the managers of the fall fairs to adopt it. It is useless to offer prizes for the best plow, if there are no men to use it properly. You may give a bad plowman the best plow that T. E. C. Brinly can turn out, and if he will only hold the handles and let the plow go where it will, you might as well give him a common scooter.

ETOWAH.

April, 1873.

Root Culture and the Value of Roots as Food for Dairy Cows.

BY HARRIS LEWIS.

Almost all kinds of soils, from that of drifting sand to the strongest clay, will, if in good condition and under proper cultivation, produce a paying crop of roots. Carrots, and the various kinds of turnips, however, do best on sandy loam, or on soils composed of fifty per cent. or more of sand, while the beet and mangolds yield much better crops on a clay loam, having less than twenty-five per cent. of sand.

KIND OF ROOTS.

After many trials with the various kinds of roots, (on a small scale, but with much care,) during the last twenty-six years, I have finally concluded that the best varieties of the French and German sugar-beets are the most nutritious, the most acceptable to the cow, and produce the best flavored milk of all the roots I have ever fed. But all these sugar-beets grow down to the crown in the soil, and cost three or four times as much labor per ton to harvest them as it does to harvest any one of the kinds of beets known as the mangel-wurzel. Again, the sugar-beets seldom yield more than twenty tons per acre, while the mangolds often yield over forty tons per acre. Henry Lane, of Cornwall, Vt., obtained some beet seed from the Patent Office several years ago, which were named the Imperial Sugar Beet. Mr. Lane raised from this seed beets which filled his ideas of beets, which could not be beat for cattle food, and by a careful and judicious selection of roots year after year to raise his seed from, has made a great improvement upon the original beets, which were no doubt the same kind now known as the White French Sugar-beet. This beet is now known as the American Improved Imperial Sugar-beet, or as Lane's Improved Sugar-beet, and taken all in all, is perhaps the most valuable of the beet family for cattle food. Among its many ad-

vantages over all the other sugar-beets I will mention the following, viz.: It will yield twice as much per acre as any one of the other sugar-beets. It grows well out of the ground, and is therefore easy to harvest; will keep until July, if protected from light and heat, and under favorable circumstances, with good cultivation, will yield more than forty-four tons per acre.

The yellow globe, known as the yellow globe mangel-wurzel, will rank as second in value for cattle food, when we consider their yield, long-keeping qualities, the ease of harvesting them, and their nutrition.

The Elvethem beet, or mammoth red mangel-wurzel, will yield a greater amount of cattle food than any other root, on the same soil, and under the same cultivation, but is inferior to the other kinds as food for dairy cows, and not a good-keeping beet. There yet remains one consideration in choosing the kind of beet to grow, and that is this: That beet which will grow well, and produce good crops on the same land for a number of years, other things being equal, will possess the greatest value. I will quote from an able essay on beet culture, read by Hon. Henry Lane, of Cornwall, Vt. the originator of the Imperial beet, before the Vermont Dairymen's Association, in the winter of 1870: "It has been my practice, when once fitted, to continue to raise beets on the same land for successive years. I know it is very generally thought that, except in the case of onions, you cannot take crops of the same kind from a field in successive seasons without a manifest falling off in the produce; that all plants exhaust the soil, each in its own way, of the specific food suited to its organization and wants; that to preserve its fertility a system of rotation must be pursued. But I can show you land in my immediate neighborhood that has been cropped with beets for thirty successive years, and in very many instances from ten to fifteen years, and invariably with increased crops." The kind of beets grown on the same land for so many years was the American Imperial, and if this beet will succeed well on the same land year after year by keeping up the fertility of the soil, while other kinds will not, it adds greatly to its value.

PREPARATION OF THE SOIL.

Inasmuch as we have chosen a clay loam on which to raise our beets, thorough under-draining will more than double the value of the land for the production of beets, and next to under-

draining in importance is deep and thorough cultivation. All stones which would interfere with the seed-drill and cultivator should be removed, and the land plowed carefully in the fall. By fall plowing clay soils the frosts of winter and spring will do more to render it in good condition for cultivation than anything in our power to do. About thirty loads per acre of good stable manure is none too much for the beet crop, and if convenient to use more it will do no harm. The manure should be free from hay, straw, or corn stalks, and everything that will prevent a thorough pulverization of the manure, and a complete mixture of it with the soil. Well-rotted manure for the beet crop is altogether the best; but when this is not to be had, cow manure drawn on during the winter, while the ground is frozen, will answer a good purpose, if well pulverized, and mixed with the soil at the time of preparing the land for the seed.

As soon as the soil is in good condition to work in the spring, the manure should be evenly spread, and thoroughly mixed with the surface soil, either with the harrow or cultivator. Level culture would be much better for the beet crop than ridging in a dry season; but in a wet season like that of last year in this locality, ridging would be our only hope of a good crop, except on very dry land, and as ridging is much the safest way, taking one season with another, I would advise it. The ridging may be done with a double mold-board plow, at a small expense, and with one horse when the ground is light and mellow, but I prefer the common plow, with two horses. After throwing the land into ridges thirty inches apart, from crown to crown, split the ridges, forming the crown of the ridge over the furrow made by the previous ridging.

When but a small amount of manure is to be applied, the greatest benefit will be derived from it by strewing the manure along in the bottom of the furrow made by the first ridging, and all kinds of coarse manure is much better applied in this way. Then, by splitting the ridges as before directed, the manure will be directly under the crown of the ridge, and all the land will have been moved with the plow, rendering it fine and mellow. After the ridging is done, it will pay well to rake the crowns of the ridges down with a fine-toothed garden-rake, leaving the top of the ridge about six or eight inches wide, free from lumps, stones, weeds, and grass-roots. This leaves a level,

fine, clean, and beautiful seed-bed, and will, I believe, give satisfaction to every one who tries it. The ridges can be baked down very rapidly if the land is in good condition, by going along the ridge lengthways, and with one backward and one forward motion with the rake, the work is done.

A good crop of peas, or peas and oats, sown broadcast, will, in most cases, render land in good condition for the root crop the next season. Greensward plowed with a double plow (sod and subsoil) will almost always insure a good crop of roots, and at much less expense than an ordinary stubble land. If greensward is taken for the beet crop, it may be fitted in the following manner: After the first furrow in each land, turn a thin or shallow furrow, as thin as possible to include the grass roots, into the bottom of the previous furrow, and then follow in the same furrow with the same or another plow, covering the sod four or five inches deep. Then a good coat of manure, well mixed with the surface soil, will, as a general rule, insure a large crop of beets, whether the land is ridged or not. On all moist soils not under-drained, and for wet seasons, I regard greensward, prepared as before directed, as the most certain for a large yield of beets, of any kind of land upon which we can grow them.

QUANTITY OF SEED.

I will quote from Mr. Lane's essay: "One pound of beet seed contains about 17,000 seeds. These seeds, though in appearance but a single seed, on opening show that they contain from one to five black, kidney-shaped seeds. Thus, what we call a seed will produce from one to five plants, averaging at least two. If sown in drills, thirty inches apart, one pound of seed will leave one seed to each foot in the row. Four pounds will, therefore, leave four seeds per foot, which is none too many to provide against all casualties to the seed." Four pounds to the acre, if sown with any one of our common seed-drills, is as small a quantity as it will be safe to sow. "If planted in hills, eighteen inches apart in the row, with two seeds to each hill, it will take one and one-third pounds, furnishing three or four plants to each hill."

Planting beet seed has some advantages over drilling in one continuous row, which are, first, a saving of at least two pounds of seed per acre; second, the labor of bunching; third, the roots stand where they are wanted, and are not too close together. A common fault

in root-growing is that of leaving the roots too close together, and not allowing sufficient space to insure large roots. It will cost no more to grow a ton of large roots than a ton of small ones, and a large root can be topped, pulled, put into the cart or wagon, into the cellar and root-cutter, just as readily as a small one, besides the satisfaction given in handling them, which is great, and great just in proportion to the size of the roots. It will cost about one-half day's work to drill an acre of beets, and about two days' work to plant an acre. For planting by hand, the following arrangement, or dibble, will be found convenient: take a piece of hard-wood about two inches square and two inches longer than three spaces between the beets—say forty-seven inches. One inch from each end bore a half-inch hole nearly through, and another in the center. Into each of these holes drive a hard-wood pin; saw them off two inches from the piece into which they are inserted, and sharpen the ends; then spring a bow for a handle lengthwise over the bed-piece, sufficiently high to make it convenient to use, fastening the ends of the bow in holes bored in the upper side of the bed-piece, about six inches from the ends.

With a dibble of this kind the holes can be made very rapidly by hand for the seed, into which a smart boy, with a limber back and a sprinkling of ambition, will drop two or three seeds and press the earth over them very rapidly. Whenever this method of planting beet seed is adopted, the seeds may be soaked in warm water from twenty-four to forty-eight hours before planting, giving the beets a chance to come up before the weeds have time to start, which is a very great advantage gained in the cultivation afterward.

I would advise all those who contemplate growing beets to obtain their seed in time to test its vitality; and this practice is not only a safe, but a paying one in regard to all seeds we sow, and especially all those seeds requiring an expensive and careful preparation of the soil for their reception. For the purpose of testing seeds, take a certain number and plant them in soil which can be kept warm and moist. This will indicate the proportion of good and poor seeds, and serve as a guide in regard to the quantity to be used in planting or sowing.

[TO BE CONTINUED.]

We can do more good by being good than in any other way.

For the Southern Farm and Home.

Ground-Pea Vines for Hogs.

MR. EDITOR—You are a great friend of the cow-pea. You attribute to it great virtues as a renovator of land, and I am prepared to indorse all you have said. If it were not for the trouble of planting peas every year I should pronounce them equal to clover in many respects, and superior in this, that cow-peas will flourish where clover will refuse to grow.

You say little or nothing about the ground-pea, although it certainly is a valuable crop, and easily raised. There is one thing about it which is not generally known, and is worth knowing. The vines of the ground-pea are a capital feed for hogs. They will fatten hogs quite as rapidly as clover. Turn them into the field in the fall soon enough to allow them to eat the vines before frost, and they will get fat without any material injury to the crop.

PINDAR.

RANDOLPH Co., GA., April, 1873.

The Ash of Corn.

Different varieties of corn yield unlike quantities of ash when burnt. We have seen statements from reliable chemists that gave only nine-tenths of one per cent.; and other statements have appeared that made the quantity two per cent. Where seed corn, perfectly dry yields much over one per cent., the case probably, exceptional. The following is about an average result: The analysis is by Dr. Jackson, of Boston:

Phosphoric Acid.....	44.57
Sulphuric Acid.....	12.77
Lime.....	1.44
Magnesia.....	16.22
Potash.....	32.48
Silica.....	1.44
Chlorine.....	0.18

109.10

It will be seen by the above figures that phosphoric acid, potash, magnesia and sulphuric acid are the most abundant elements present. A good superphosphate of lime which will supply both phosphoric and sulphuric acids, and wood-ashes or German potash salts, and a little epsom salts, or sea salt to supply magnesia, will do the needful. A first corn fertilizer is greatly needed in the South. It will be seen that corn has very little lime in the seed. In stalk, root and leaf, the ash is quite different from the above. The stalk has, in round numbers, seventeen per cent. of phos-

phoric acid; sulphuric acid, one per cent.; lime, eight per cent.; magnesia, seven per cent.; potash, ten per cent.; soda, sixteen per cent.; silica, twenty-seven per cent.; chlorine, three per cent.

Wood ashes, land plaster and common salt, are generally regarded at the North as about the cheapest help to farm-yard manure in making corn.—*L., in Plantation.*

Which Green Crop.

The green crop which a farmer will sow for pasture and then plowing under, must be determined by the character of the soil upon which he desires to grow it. It is conceded that of all green crops, clover is the best for these purposes, but it is also known that there are soils upon which it is not possible to grow clover, and these are generally soils which can be more permanently fertilized by a green crop than by any other means. Such, for instance, are the very sandy soils. It was once thought that clover would not grow at the South, but within a few years past some most astonishing results have been obtained by growing it on old red lands and then plowing it under. Thousands of acres deemed valueless have been made fully as fertile as when they were first cleared. Yet on these very lands it was not thought possible to grow clover fifteen years ago. There is not an acre of these red lands, or other lands containing a large percentage of clay, which may not be made to grow clover by using lime. Hence on all such soils it is folly to think of using any other crop as a green fertilizer.

But for the light, sandy soils, some other must be adopted. Next in the list of such crops as have been experimented upon comes rye, then a species of bean plant but little known in this country, but of great value, called lupine in Germany; then we have in the record of the German Agricultural College experiments the pea. What pea was used we have no means of ascertaining, but we do know that there is a plant common in the Southern States, and which grows on the poorest soils, which is at least equal to clover as a green fertilizer. A ton of clover plowed in in its green state, say when in blossom, will add to the soil about thirty-two pounds of potash, eighteen pounds of soda, twenty-five pounds of phosphates, thirty-eight pounds of carbonate of lime, four pounds of magnesia, two of chlorine, and a little sulphuric acid and soluble silica.

A ton of the cow-pea of the Southern States, plowed in just as the bean has nearly formed, would add about thirty pounds of potash, fifteen of soda, thirty-two of the phosphates, twenty-four of lime, fifteen of sulphuric acid, and more of chlorine and soluble silica than the clover. It is plainly evident that even were it possible to grow the clover on these sandy soils, that this pea is preferable.

While thus recommending the cow-pea, as it is called, as a fertilizer for sandy soils, we would not have any one substitute it for clover on soils where that valuable plant will grow, for clover has advantages not known to be possessed by the cow-pea, and it may even be a point of doubt whether the pea will grow well on those soils adapted to clover.

Hence we would recommend, as a green crop for the Northern States, clover, where it will grow—where it will not grow, rye; for the South, clover on the old red-clay lands, on the sandy soils, the cow-pea. We believe these three plants to be capable, with proper management, of revolutionizing the agricultural systems of the country, and of adding millions of dollars of wealth by the improvement of lands now thought to be worn out and valueless. There is no man so poor, who can farm at all, that need be without a fertilizer with one or the other of these plants, and that, too, a fertilizer which will not cost him hard-earned dollars, and then turn out to be adulterated with brickdust.—*N. Y. Weekly Times.*

ALSIKE CLOVER SEED.—A grower of Alsike clover in Canada writes: The Alsike clover bears its seed in its first blossoms each year; consequently, when I wish to save seed, I let the clover stand about two weeks longer than I would for a hay crop alone; then cut and house it as soon as cured the same as for hay. About the first of November, so that I can have the hay for winter use, I employ a clover thresher, and thresh it out. They thresh about twenty bushels in a day. I then run it through my fanning mill, which blows out the dust and fine dirt; but it will still be full of bits of broken hay; and if there are any other seeds in it, they will be there still. I then take a very fine wire sieve, that will, with considerable shaking, let the Alsike through, and nothing else. This has to be done by hand, and is too often dispensed with by farmers, when cleaning seed. The Alsike clover yields from six to eight bushels to the acre; the red clover from four to six.

For the Southern Farm and Home.

The Scuppernong Grape.

MR. EDITOR—As I have had some experience during fifteen years relative to the value of the Scuppernong grape, and the manner of cultivating it; and as I fully believe, from this experience, that a great blessing to the country would result from attention to it, I give my views from a sense of duty.

According to my experience, confined, it is true, to only a few vines, this grape *never fails*, and neither cold, nor heat, nor rain, nor drought, nor birds, nor insects, nor mildew, ever hurts it. I mean to say, nothing hurts the fruit, and I add, nothing hurts the vine but animals. It probably never dies nor becomes diseased, if cultivated, and stock are kept off. It bears full every year, as full as any muscadine ever seen. I have known other vines than mine to partially fail, but I believe this failure was probably the result of improper cultivation, or rather no cultivation, letting the vines run upon arbors under which the earth is neither manured nor stirred.

The vines should be set forty feet apart, in rows of twenty to forty feet distant. The earth should be well manured and kept in good order. The vines, when young—say the first summer after being set out—should not be allowed to branch until about two feet from the ground. Then allow three or four branches to be properly directed, but let there be no further pruning. Only train the vines the way they should run. Unless sprouts start up about the root, which should be clipped, the vine will never need pruning or trimming, and certainly should not be cut or broken or bruised from first of January to first of August.

The trellis should be made by posts of the most lasting materials to be had, placed well in the ground about eight feet apart, and ten or twelve feet high, connected by rails or something equivalent, beginning about eighteen inches from the ground, eighteen inches apart, and reaching to the top of the posts. To these rails the vines should be trained. I repeat, pruning is never necessary or useful, except, as I have heard suggested, that the fruit will be larger and richer by pruning the vines. To this I say nothing, as I have had no experience. If an experiment be made to give satisfaction as to this point, I advise that it be made at first upon only a few vines. But it may be asked if these will not become too crowded? Not the least. They cover both sides of the

trellis very thickly, and bear from the earth to the top. They grow luxuriantly and thickly in the spring, in small branches from parts of the main prongs, but all die in one or two years, and other similar branches sprout out and cover the outside. The dead branches do no harm whatever.

With my first vines I used the trellis plan, with regret, from necessity, and some years after adopted arbors. I found the trellis plan much the better—the better enabling you to till the ground; better for the sake of sun and air; and renders the fruit far more easily to be gathered, as you may desire from time to time. Besides, by the trellis system, the lower vines will, if permitted, occasionally reach the ground and take fresh root.

It is very easy to make the wine, and I verily believe there is none better. This is as strong as the best Madeira or sherry.

I most earnestly advise every one to try to raise the Scuppernong grape as extensively as practicable; and feel confident that by this means any man of industry can become rich enough in ten years on ten acres of land with but little trouble. I write this, Mr. Editor, with the sole motive to give useful information.

SENEX.

For the Southern Farm and Home.

Awake, Southern Farmers!

We are at last verging on to a more scientific, practical system of farming, but how many are treading their same old tracks! and they are the ones to whom I am writing.

You still continue to toil manfully as you always have done, and yet at the end of each harvest you have made no surplus money. Those who have a good tact for saving are just square, but unfortunately the others who have no such tact are groaning under burdens of heavy debts. Now for what is all this? Why will you continue to tread blindly the path to poverty, when nature is ever ready to help you abundantly in this noble work? Be ashamed, farmers, for your unmanly conduct. Let us study to extricate them from this sad dilemma. What is the first step? Can any one answer? Induce them, I think, to subscribe to a good farm journal, not only one year but continually. Continue to pour in through every number sound practical knowledge for their benefit. Show them, in a plain, practical mode, how labor can be reduced and profit increased, and do it in a lively manner.

Arouse from your lethargy, farmers! for some of you have been slumbering in poverty for wellnigh a lifetime, when your land, if you had not abused it, would have made you rich; but you who are not so far advanced in life, listen—it is not too late. Amend your ways, and yet your poor lands that lie so naked every summer, exposed to the sun's hottest rays, will yield a bountiful harvest. Read the farm journals of the land, and you will never have cause to regret it, also train your sons and daughters to do the same; while the latter could not be harmed, the farmer will have derived an incalculable benefit.

EDGEcombe.

WHITAKER's, N. C., April 5, 1873.

The Secret of Yankee Prosperity.

Under this head the veteran editor of the *Mobile Register*, Hon. John Forsyth, has this to say:

A Southern man, after having made a flying trip through the New England States, comes back filled with astonishment at what he has seen, and perfectly discouraged with his own section of country. There he saw little villages sticking in the midst of barren and uninhabitable mountains, with no surroundings to support them, evincing a spirit of life and prosperity unknown to even our large towns—the recognized trade-centers of our best agricultural regions. And in the country he saw little farms producing like first-class English gardens, though on soil originally too poor to have grown bear-grass, and in situations that a Southern man never would have thought capable of being converted into a goat pasture. The people, all as a general thing, seemed contented and prosperous; and if he had inquired into their circumstances he would have found, strange as it may appear, everybody in these little villages well off and making money, and the little farms, with their stone piles here and there, and their stones constantly working to the surface to be carried off into other piles, and their annual calls for fertilizers to the extent of one hundred and fifty dollars per acre, actually clearing their owners from one to three hundred dollars on every acre inclosed. No wonder that he is discouraged when he looks from this picture upon our favorably located towns and notes their inactivity, their poverty and general dilapidation, and upon our broad and fertile acres, and reflects that they are really, in very many instances, not paying the expense of culture.

One would naturally conclude that there must be some secret connected with all this, and so there is. At the village station the close observer would notice piles of cotton bales, a circumstance calculated to create no particular interest in the South, but there, thousands of miles away from where cotton should be grown, it would take the form of

mystery. Stepping out upon the platform in quest of a solution, his ears would be greeted by a sound as of a waterfall having a peculiar humming accompaniment—spindles. The case would be made plain—the strange little village would be recognized as a manufacturing point, and then he would know that we in a far off section were digging its prosperity from our soil—feeding it into a vigorous life upon the very food for which our towns were starving, and asking it nothing in return; actually shipping our cotton at our own expense, and then, in order that it might grow fat on its business, buying its fabrics at its own profitable figures, and paying transportation on them to our homes. What a kind-hearted people we Southerners must be!

Then for the secret of success among the farmers. Passing through the country with his eyes open, the close observer would at the proper season soon have his attention arrested by an improved mower sweeping over the meadow under the exclusive management of a youth of, say sixteen, and accomplishing more in a day than could in that time be wormed out of a dozen freedmen with their scythes. A little later and he would see the younger brother of the youth turning the hay; and then in due time would come a still smaller boy with rake, followed by a trio of little fellows having all sorts of fun as they, with a hay fork, stored away the crop in the hay-loft.

In everything done on the farm in New England this same plan is resorted to. If the soil must be prepared, instead of setting a dozen freedmen at it with their mules and plows to sweat through a week, as we would do, out comes a machine managed by a boy or two, and in an incredibly short space of time the job is done and well done. A lot of seed is to be sown that would give our hands a long, tedious task; but there a stripling with a seed sower puts its down exactly right and in very short order. And when the crop is ready to be hoed, instead of charging it with a black army to play for pay, a boy harnesses his nag to a horse-hoe, takes his seat as in a sulky, and rides about over the field hoeing several rows at a time. In short, New England works by machinery, and therein lies the secret of Yankee prosperity. She has simply changed places with us—she owns her labor. If it were otherwise, or, in different words, did she have to work on our plan, and depend on our kind of labor, and did we not in the goodness of our hearts give her the profits on our products, a few years would find her entirely depopulated, a happy hunting ground, upon which the red-man might pitch his wigwam, never to be disturbed by any encroachment of civilization.

There is no reason why we in the South should not own our labor in the same way, and set our spindles going, thus giving prosperity to our own towns and villages. We can never be a success till we do it. Let us think the matter over.

To remove warts on horses and cattle, bathe the wart two or three times a week with turpentine and sweet oil.

Scientific Department.

From the Boston Journal of Chemistry.

Farm Pencillings at Lakeside.

AGRICULTURAL PROGRESS.

The present spring, we enter upon the tenth year since Lakeside Farm passed into our hands, and we became specially interested in matters of husbandry. In entering upon a new decade, it seems a fitting time to look back, and note the progress in practical agriculture, and consider the new discoveries made, which have an important bearing upon farm industries. Certainly, no ten years in the history of the world have furnished so much to inspire hope, and awaken gratitude in the hearts of soil cultivators, as those we have just left behind. We have learned much regarding the best methods of tilling the land, and reclaiming those waste bogs and low meadows which have for so many years been neglected. We have had the important fact more decidedly forced upon the attention, that it is better to obtain large crops from small parcels of land, than scanty ones from large areas. We have had brought to our notice new grains and grasses which promise to be important additions to our products; and inventors have perfected some labor-saving machinery which appears well calculated to relieve the husbandman of much toil. These and many other facts show that we are making progress, but it is in another direction that the most important discoveries have been made. No matter with how much enthusiasm and intelligence the farmer pursues his calling, he can have but poor success unless he provides for his plant children ample supplies of food suited to their wants. He may dig and pulverize the soil, furnish plenty of water, and sow the soundest seeds, unless the sprouting plant finds within easy reach something to feed upon, it must languish and die. A generous, full supply of plant food lies at the very base of successful husbandry.

Ten years ago, when we began to till our acres, it was known that phosphoric acid and potash were two of the great essentials of plant nutrition, but it was not known that any abundant sources of supply existed outside of animal and vegetable products. Bone was the only substance furnishing phosphoric acid, and ashes alone gave us potash. The farmer, as he witnessed the gradual exhaustion of his soils, could look in no other direction for a supply of these precious materials, and the prospect was indeed gloomy.

The amount of animal excrement and waste organic substances within his reach was becoming wholly inadequate for his wants, and it was easy to see that as populations grew denser, the need would become more urgent. But if any one had fears regarding future supplies of phosphoric acid and potash, he need entertain them no longer; for the remarkable discoveries made during the last decade prove

that a wise Providence has stored up in the earth vast quantities—enough, indeed, for the wants of all future ages. No discoveries of the industrial resources of our planet have been more unexpected and wonderful than those of potash in salt mines, and the fossil phosphates in this country, France and Russia.

We have already, in several numbers of the *Journal*, spoken of the immense beds of phosphatic rocks in South Carolina, and also of the potash resources of the Stassfurt salt mines in Germany. Quite recently, attention has been called to the vast stores of phosphatic rocks found in Russia, and it is indeed singular that they have remained so long unrecognized. When the Russian farms had become impoverished by long culture, and much anxiety was felt in consequence, it was discovered that the very stones used for building purposes in a large section of Central Russia contained the precious elements needed to restore fertility. A strange, ferruginous stone had long been employed for paving the streets and constructing houses in the towns of Koursk and Voronezh, and it was not until 1866 that its precise chemical nature was understood. Professor Engelhardt, under the direction of the Russian government, made analysis of these stones, and found them to consist of phosphate of lime and magnesia, with iron, alumina, and silica; the phosphoric acid contained, amounting to from 20 to 33 per cent. The extent of country covered by these stones is immense, not less than 20,000,000 hectares. The fertilizing material locked up here is sufficient to supply the wants of all Europe for a hundred centuries. It is not to be expected that these stores of plant food will be made immediately available to farmers everywhere, for much is yet to be learned regarding the best processes for preparing phosphatic manures from mineral sources. We have yet much to learn, not only respecting their preparation, but how and where to use them; but this knowledge will come in due time. It is a matter of vast consequence to know that we have the material. We shall not have to wait long before the best method of *cooking* the plant food is understood.

As regards sources of supply of the nitrogenous element needed in manures, none of importance that are new have been recently brought to light. It may be said, however, that science has developed some significant facts, which awaken the suspicion that there are sources of nitrogen in close proximity to plants not well understood. It is certainly true that the application to soils of nitrogenous compounds wonderfully increases crop results, and it is also true that plants have the power of hunting up the element from some quarter to a surprising extent, when we give them plentiful supplies of phosphoric acid and potash. Notwithstanding Boussingault has recently asserted that nitric compounds are not formed in the soil from the nitrogen in the air, it may be that he is in error. If he is right, it is not impossible that atmospheric nitrogen is in some other way brought into assimilable condition so as to be appropriated by plants.

It is clear from these brief reflections upon the knowledge gained, and discoveries made in matters affecting the interests of husbandry during the past ten years, that there is much to stimulate and encourage every tiller of the soil, and dull indeed must be the intellect which can contemplate these discoveries without emotion.

Professor Agassiz on the Negro.

We copy the following extract from a lecture recently delivered by Professor Agassiz in California, which completely upsets the evolution theory of Darwin, which the Professor aptly designates "a mire of assertion:"

"I have pointed out over a hundred specific differences between the bonal and nervous systems of the white man and the negro. Indeed, their frames are alike in no particular. There is no bone in the negro's body which is relatively of the same shape, size, articulation, or chemically of the same composition as that of the white man. The negro's bones contain a far greater proportion of calcareous salts than those of the white man. Even the negro's blood is chemically a very different fluid from that which courses in the veins of the white man. The whole physical organization of the negro differs quite as much from the white man's, as it does from that of the chimpanzee—that is, in his bones, muscles, nerves and fibers, the chimpanzee has not much farther to progress to become a white man. This fact science inexorably demonstrates.

"Climate has no more to do with the difference between the white man and the negro than it has with that between the negro and the chimpanzee, or it has between the horse and the ass, or the eagle and the owl. Each is a distinct and separate creation. The negro and the white man were created as specifically different as the owl and the eagle. They were designed to fill different places in the system of nature. The negro is no more a negro by accident or misfortune than the owl is the kind of a bird he is by accident or misfortune. The negro is no more the white man's brother than the owl is the sister of the eagle, or the ass the brother of the horse. How stupendous and yet how simple, is the doctrine that the Almighty maker of the universe has created different species of men, just as He has different species of the lower animals, to fill different places and offices in the grand machinery of nature."

Dr. Voelcker, says: "placed in a heap with ashes or sand, occasionally moistened with liquid manure or water, bone enters into putrefaction, and becomes a more soluble and energetic manure than ordinary bone dust."

Those who think our cultivated lands must grow poor as they grow old, will find food for reflection in the fact that not many years back, the average yield of wheat per acre in England was about 10 bushels—it is now over 30 bushels. Brains accomplished it.

National Agricultural Congress.

PRESIDENT'S OFFICE,

CHICAGO, March, 1873.

The next, being the second meeting of the National Agricultural Congress, will be held at Indianapolis, Ind., commencing on Wednesday, May 24th, 1873. The necessary local arrangements for the occasion, it is now understood, will be ample and complete.

By the constitution of this body each State and Territory is entitled to two representatives for every State organization engaged in fostering agricultural pursuits. The United States Department of Agriculture, Agricultural Colleges and Schools with an endowment of not less than \$20,000, and Agricultural and Horticultural Societies of not less than fifty members contributing to the support of this Congress, are entitled to one representative each.

In urging the appointment and attendance of delegates as thus provided for, very little needs to be said. The purpose of the organization is to afford an opportunity annually, for an interchange of views and opinions upon all subjects affecting the interests of Agriculture and its kindred industries, and to promote concert of action among those engaged in these pursuits, in all matters relating to them and of national importance.

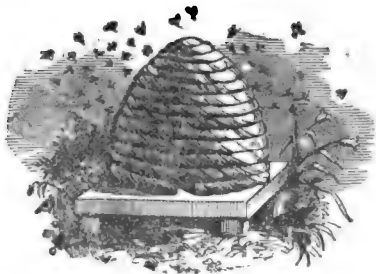
The advantages to be derived from such a medium, even in ordinary times and under ordinary circumstances are quite apparent, and now, that the public mind is thoroughly aroused to the necessity of considering with the greatest deliberation many questions touching the industrial interests of this country, there is good reason to expect a very full representation. No similar body has ever assembled in the United States upon whose action rested a more serious responsibility than will rest upon the action of this, in many important respects. I hope it will be the pleasure, as it certainly is the duty of every organization entitled to participate, to avail itself of the privilege. The constituent bodies which have appointed or may hereafter appoint representatives will please notify the Secretary, Chas. W. Greene, Jackson, Tennessee, who will in due time advise them of the subjects to be presented for consideration at the meeting.

JOHN P. REYNOLDS,

President National Agricultural Congress.

As daylight can be seen through very small holes, so little things will illustrate a person's character.

The Apiary.



Directions for Beginners.

No colony should be swarmed artificially until the flowers yield an abundant supply of honey and the stocks have become very populous.

The following is a very good method to divide or swarm a single stock:

Blow a few puffs of smoke in, at the entrance, and at the top or side, as you open the hive; remove one or more of the frames near the center, examining one side carefully for the queen, while an assistant looks for her on the other side. As soon as she is found, set the card of comb, with the queen and adhering bees, into a new hive, with a card containing honey, and fill out the hive with empty frames. Set this hive on the old stand, and remove the old hive to a new stand, some rods distant. As the old hive is queenless, the bees will build drone comb if an empty frame is left near the center; hence the two empty frames to fill the hive should be placed next to the sides of the hive. Many of the old bees will visit the fields without taking notice of the change in the location, and will return to the hive on the old stand, making that colony strong in numbers, while the young bees hatching in the old hive, on the new stand, will soon render that so populous that they would be likely to swarm if permitted to raise several queens. It is very injurious for such stocks to cast a swarm, because most of the brood is hatched when the first young queen appears, and so much time will elapse before a queen is fertilized, lays eggs and they hatch, that the colony becomes so weak that they are unable to protect their combs from the moths. The remedy is to give the queenless part a caged queen or queen cell half an hour after dividing. The bees are peaceable then, having realized their loss of a queen, and not having commenced constructing queen cells, will not destroy a queen cell inserted then, and would soon cluster over a caged queen, melt and dig out the wax stepper, kindly receiving her, with the reverence due a mother upon whom the life of the family depends.

Admit the bees to a few surplus honey boxes as soon as the empty frames are half filled with comb.

The safest of all early swarming methods is in making one new colony by taking one or

two frames from each of several hives, forming a new colony every week or two while the honey harvest lasts. You thus avoid the danger incurred in natural swarming or dividing, of starvation when unfavorable weather ensues immediately after swarming. Many beginners let natural swarms starve out and fly away, to find a better master, when a little food would have kept them over until honey was plenty again. But the honey season may close without harm to the colony or old stocks, when one is made from several, as above, for all have an abundant supply for the coming winter.

We prefer, however, a hive admitting the use of honey boxes and two sets of frames, by which swarming may be postponed until the close of the honey harvest, giving us the whole strength of a populous stock to gather it. Besides, two sets of frames filled with brood and honey only requires a division and the rearing of a queen, when there is no other work to be done in the colony.

QUEEN REARING.

Some rear queens in small nuclei, each nucleus hive large enough to receive three or four frames five or six inches square. If we were to use small hives again, we would construct them to receive two or more full-sized frames, as the convenience, advantages and economy thus gained, are of great importance.

Where only a few dozen nuclei are employed, we advise beginners to use common movable-comb hives, such as they use in their apiary. With such hives, a comb of unsealed brood can be given to any nucleus, to hasten the nuptial flight of the young queen and prevent her household following her, and all ascending to the woods. Such cards of brood left until half of it is hatched, greatly strengthens the nucleus, and the comb is then in just the condition to be inserted in the center of the full colony, and insuring the cells to be filled with eggs, after which the card must be removed to a queenless nucleus having bees enough to cover all the brood. If such cards be new comb, and the flowers yield abundantly, or the nucleus be fed, more queen cells will be constructed.

TRANSFERRING.

The best time to transfer bees and combs from box hives to movable frames, is at the beginning of the May honey harvest, before the combs are filled with new honey. Blow a few puffs of smoke in at the entrance, from a roll of cotton rags, or piece of decayed wood, then invert the hive, and with a knife cut out a piece of comb containing brood, (drone brood is just as good and is of no value otherwise.) Fasten this in a hive or box, and place it on the old stand to attract the bees returning from the fields. Place another box, or hive, of the same size, over it, mouth to mouth, wrap a sheet around the joint to keep in the bees, and rap with a stick on the lower hive for fifteen or twenty minutes until the bees ascend with the queen, into the empty box above, then set it in the shade of a tree and leave it covered with a sheet until the combs are transferred.



Carry the old hive into an outhouse or barn, and place it upon a sheet. Select one side nearest parallel with the range of combs, pry off this side with a chisel or hatchet, blow smoke on the bees to drive them back, and with a long knife cut out a card of comb and lay it on a board covered with a woolen cloth. Lay an empty frame on the comb, and with the knife mark the comb on the inside of the frame where it is to be cut to fit the frame. Fasten the comb in the frame with fine wire, cut up long enough to wrap around the frame and twist the ends together. Two pieces of wire can be laid across the board before the comb is placed on it, and when cut, press the frame over the comb, fasten the ends of the wire and raise the board and comb to a perpendicular position, when the frame is ready to set into the new hive. When about half the combs are removed, if the bees are in the way, a small box may be set on top and the bees driven up into it with smoke.

When the combs are all transferred to the hive, wipe the drippings from the bottom-board with a wet cloth. To avoid chilling the brood, bees may be admitted to the new hives before the transferring is finished. Set the hive on a sheet, with the entrance enlarged to its greatest capacity, shake the bees on the sheet, when they will enter the hive, and the work is done. Contract the entrance for a few days to guard against robbery. The wires may be taken off after a week or two, when the combs are thoroughly fastened by the bees. If unfavorable weather for gathering honey should ensue, the stock should be fed in the chamber of the hive, as the combs will be fastened better if the bees are well supplied with material for manufacturing wax.—*Bee Journal*.

SCAB IN SHEEP.—The following ointment should be applied, by parting the wool and rubbing it into the furrows from the head to the tail, and about four inches apart: Take lard, or palm oil, two pounds; oil of tar, half a pound; sulphur, one pound. The two latter ingredients being gradually mixed together, the former should then be rubbed down with it. Tobacco water is another remedy which has been found effectual. A pound of common tobacco may be boiled in about eight gallons of water, and thoroughly applied, the skin being first well cleaned with soap and water.

The Stock Yard.

Sweeney.

This is the name applied to an imaginary disease unknown to the scientific veterinary surgeon. Lameness of the feet, in any form, whether from a bad corn or navicular disease, will cause atrophy of the shoulder. In the case of shoulder lameness, the part affected will be located in the junction of the humerus with the shoulder blade, while the sweenied part is represented to be at the upper part of the shoulder blade, and is supposed to be an adhesion of the skin to the bone. It is impossible to produce lameness of the shoulder at this point, as is proved in the treatment of fistula of the withers, when the knife is used much lower on the bone to remove sinuses, without producing lameness. Setons have been inserted the entire length of the shoulder bone, and horses work daily on the canal with galled shoulders, but with no lameness whatever. Then why torture unnecessarily an animal for what is merely the effect of lameness of another part? The muscles of the hip will decrease from spavin. Action develops muscle, and a want of action causes a decrease of the muscle in the leg. The horse's shoulder is often blistered for this disease when a large ringbone is in view on the same leg.

Instead of torturing the horse for sweeney, horsemen should make a careful examination of the feet, and they will generally find the real disease.—*Wm. Somerville, V. S.*

Horn-Ail.

There is no such disease as "hollow-horn" or "tail-ail." All scientific veterinary surgeons, in their writings, ignore such diseases. The cause of more or less than the ordinary heat in the horn is the derangement of other parts of the system. When a man is subject to cold feet he might as well call it the "foot-ail." Cold or hot horns is a symptom sometimes of one disease, sometimes of another. We have seen it in case of impaction of the manifold or third stomach, in pleuro-pneumonia, yellow, etc. Each of these must be treated by itself. An ounce of prevention is worth a pound of cure. With proper attention to feeding and care, these diseases will seldom occur. Long confinement to dry food is one fruitful cause of

disease in cattle. When a small quantity of roots are to be had, the change from grass to hay will not be so great. When roots cannot be had, then a small quantity of oil-meal will have a very beneficial effect in keeping up a proper action of the bowels, and thus fed, with good care and proper protection from storms, there will be little trouble with "tail-ail" or any other ail.—*Live Stock Journal*.

Good Points of a Cow.

Observation and experience have taught some rules to be observed in the choice of good milkers, which, though not infallible, are by no means to be despised. A few doggerel verses, which appeared some months since in the *Farmer's Magazine*, states what are popularly considered in England the points of a good cow, though, as already remarked, it is a rare thing to find them all combined in one animal; and therefore this brief cow poem is to some extent a fancy sketch. As now quoted, it is slightly altered from the original:

She's long in her face, she's fine in her horn,
She'll quickly get fat without cake or corn;
She's clean in her jaws, and full in her chine,
She's heavy in flank, and wide in her loin.

She's broad in her ribs, and long in her rump,
She's straight and flat-backed without e'er a hump;
She's wide in her hips, and calm in her eyes,
She's fine in her shoulders, and thin in her thighs.

She's light in her neck, and small in her tail,
She's wide in her breast, and will fill the milk-pail,
She's fine in her bone, and silky of skin,
She's airy without—a meat market within.

To state in prose the characteristics of a good milker, as a guide in purchasing dairy stock—

1. Youth. A cow is in her prime at from four to six years, and the best paying time to buy is just after the birth of her second or third calf.

2. Prominence and fullness of milk veins, and velvety softness of skin. The milk veins run down on either side of the animal toward the udder, and are easily perceptible to the eye, or can be readily found by pressure of the hand, if the animal is not over fat. The skin should be soft and mellow, not hard, rough, and "staring."

3. Symmetry, fullness and softness of the udder. It should be broad, well spread out, projecting behind the legs, and also reaching forward under the belly. There should be a softness and thinness to the touch, and an absence of fleshiness and thickness.

4. Perfect number and condition of teats. If one teat is wanting, about a fourth less milk will be the result. A cow's udder is not, as some suppose, a barrel with four taps, but is divided into four different compartments, called "milk glands," each of which has its own tap or teat. It is not only important that the full number of teats be present and in working order, but it is desirable that they be well placed, not crowded together, but pretty far and uniformly apart; rather long and tapering; all pointing out and downward; equal in size and even in appearance.

5. Docility and quietness of disposition. These are indicated by large, mild and clear eyes, and an air of contentment generally. A cow that is quiet and contented feeds at ease, chews her cud with entire satisfaction, and will secrete and yield more milk than any restless and turbulent animal, having similar milking characteristics in other respects.

Management of Old Cows.

In the management of live stock, there is probably no greater general defect than in providing for the wants of old animals. Farmers and others who have them in their keeping, do not purpose neglect, but the habit is too common of allowing all grades and conditions of domestic animals one and the same chance for life, when there should be a marked discrimination shown. Go into almost any farm-yard or pasture in spring or early summer and you will see the aged animals, either horses, sheep or cattle, much thinner in flesh than those in their prime. Many suppose it to be useless to attempt to keep them in good flesh, under any system of management.

While I would not advocate an opinion that old animals are as valuable as young for milk, meat, wool or labor, I do know that they may be kept in good flesh with proper care, without any great outlay of time or money, and made much more profitable to the owner than they usually are. What they demand is plenty of food and plenty of time to consume it in. In summer and fall, when pasture feed is good and abundant, flesh is laid on, but when herded in the yard, or fastened up in the stable, the chances for their getting a full share among the active ones, are unfavorable. They are not only driven back, when loose, but by imperfect teeth fail to consume their allowance in the stalls in time to save it from the vigorous and greedy. Where an old cow is kept singly, she will usually be found in good flesh during the entire year, but put her in with a herd, without even changing the quality of the feed, and subject her to the annoyance of other animals, and a different condition of things will be found the first spring following the change.

There are few cow-stables with the mangers divided and subdivided, so that each and every animal can get its full share, and no more; but I use one of this kind, and have kept cows in my dairy from twelve to twenty-three years old, front teeth entirely gone, in good condition winter and spring, with no more grain feed than was given to cows six and seven years old. The hay was usually cut, and the grain consisted of wheat bran and ground oats.

I should not advise farmers to purchase old animals, but superior cows and horses are sometimes kept until they grow old in service. Such extra animals frequently pay well to an advanced age. The best time to get rid of old cows is in the fall; dry them off early, and feed plentifully of wet, rich food. Old animals prepared for the shambles rapidly, make very good meat.

G. E. B.

CLEVELAND, OHIO.

Good Mutton Sheep.

Mr. L. A. Morrel closed his essay on sheep and sheep husbandry with the following:

There are various points that are sought after by breeders, not because of the particular value of those points, but because they are evidence of other valuable qualities, such as aptitude to fatten and early maturity. Thus in the South-down breed, small legs and heads and small bones are esteemed, as they are qualities which are found connected with fattening properties. Black muzzles and legs are also valuable, probably because they denote the good constitution and hardiness of the animal. We must, however, take care lest, in carrying these points to an extreme, we neglect other valuable qualities. Straightness of the back, breadth of loins, and rotundity of frame are points which cannot be disputed, and are not merely signs of good qualities, but good qualities themselves. The straightness of the back, so perfect in the Leicester, is by no means natural to the South-down in an unimproved state, but rather the contrary. In the improved breeds, however, it is present, and is justly regarded as an excellent point, giving a better surface for the laying on of the flesh, and affording larger scope for the abdominal organs. Its converse too, a round or convex back is produced or increased by the effects of poverty and cold, and is almost sure to follow if the breed is neglected and exposed.

The development of bone, of course, requires nutriment as well as any other part, though not, perhaps, in the same degree. Large bone, therefore, abstracts nutriment which would otherwise be more profitably employed, and thus is anything but a desirable point in sheep. Horns for the same reason are much better dispensed with. One point in sheep which is justly regarded as extremely favorably is a soft, mellow feeling of the skin and parts beneath. These parts are the cellular, or rather adipose membranes, which in fat sheep are full of fat; and the possession by lean sheep of this mellow feeling, denotes the plentiful existence of these membranous cells ready for the reception of fat, which is deposited in them almost in the form of oil.

Breadth of loin and rotundity of frame are qualities that require no observation, having been before alluded to. The former denotes the presence of a large quantity of flesh in the spot where it is most valuable, and it also bespeaks a large and roomy abdomen. A round frame is also the sure attendant of a large abdomen and an extended surface for the muscles of the back and loins. A general squareness of frame bespeaks large muscles, and particularly of the quarters.

What, indeed, is wanted in a well-formed animal is as much flesh and as little bone and gristle as possible, and this flesh is required where it is most valuable; for instance, it is much more valuable on the loins and quarters than about the head and upper or scrag-end of the neck. A large development of flesh is pretty sure to be accompanied by a disposition

to fatten, but for profitable feeding it is essential that these qualities should be developed early, constituting early maturity.

The Poultry Yard.

White Leghorn Fowls.

Wm. M. Lewis, author of the "People's Practical Poultry Book," gives the following as his experience with this breed. He says:

We were repeatedly asked in 1870 and 1871 our opinion of white Leghorn fowls, as to their qualities for laying, hardiness, &c. Not at that time having had any experience with them, we could give no opinion, except from hearsay.

In the summer of 1871 we procured one dozen eggs from J. Y. Bicknell, and set them, from which we reared six fowls—five cockerels and one pullet. We procured from the same gentleman two nice pullets. We then took the best young cockerel and three pullets and put them in a pen with a runaway attached, six by fourteen feet. We think the chickens were hatched the latter part of July, 1871. March 10th, 1872, we got our first egg from these pullets; on the 17th of the same month we received three eggs per day, and they continued to lay at that rate, with few exceptions, up to September 2d, at which time they began to fall off. Some days we would get two, and on other days three eggs. On the 8th of October they ceased laying altogether. The molting season seemed to last them a very short time. They feathered up quickly and showed no signs of weakness or sickness during the whole time. These three pullets have laid, by actual count:

March 16th to 31st.....	48 eggs
April.....	80 "
May.....	93 "
June.....	90 "
July.....	87 "
August.....	90 "
September.....	76 "
October.....	16 "

Total.....590 "

In about 215 days these three pullets have laid 590 eggs. During the time they have never shown any signs of being broody or sick, and we think not a day passed but what they ate their food with as much relish as they did the first day they commenced laying.

We fed these fowls regularly twice a day—in the morning at between seven and eight o'clock, and again in the afternoon at three o'clock. They have always within reach plenty of fresh water, the tank being filled every day; during hot weather the tank is set in the shade.

Our feed is corn and screenings, (mixed,) barley and buckwheat, (mixed,) and once a week a warm mash of corn meal and potatoes thoroughly cooked and well peppered with either black or cayenne pepper. We generally, once a week, dig up the earth in the hen-yard, and give them a pile of coal ashes to dust them-

selves in, and occasionally give them a sheep's pluck; once or twice a month a few pieces of lime are thrown into the hen-yard. The nests are frequently dusted with sulphur, which is sure death to vermin.

We have reared but few Leghorn chicks during the past summer; but those that hatched have been perfectly healthy, and showed no signs of any disease whatever. We must say that we were much astonished at the rapidity with which the chicks feathered up. A gentleman visiting our yard during the past summer, and observing chicks six or eight weeks old, mistook them for yearling bantams, so fully were they fledged.

The above is our experience, in a small way, with white Leghorns during the past season, and from what we have heard, and learned by our own experience, we do not hesitate to say that they are a first-class breed as egg-producers, for hardness of constitution; and as a table bird they nearly equal the flesh of the Dorking, though they do not breed to as great weight as do the Dorkings.

How to Feed Chickens, and What to Give Them.

Corn, wheat screenings, and occasionally coarse meal, scalded and mixed with hot water, make up their food. I never give them corn meal mixed with cold water—don't believe in it—in fact I think that is one source of their sickness and disease. All their food is better for them cooked—but cooking of corn and wheat implies trouble. So it does—but it pays to do it—and does anything pay without trouble? However, let me say—whether you feed on raw corn or not—never feed on raw corn meal. Now, when I feed, my plan is to walk all over the yard—about half an acre—and scatter the food right and left (two grains never fall in the same spot), and immediately you see the whole army scatter themselves as skirmishers, and the yard presents, for an hour and more, somewhat the appearance of an up-turned ant-hill. I never give them as much as they can eat; they always leave off hungry. By my system of scattering the food—old and young, weak and strong, small and large—all get their chance and share, and all are kept so busily and actively employed that the very process of feeding stirs them about, and keeps them from being too lazy to move about. *Clean water* (you see I emphasize the clean part) they must have free to all. Drinking foul standing water kills more chickens than nine-tenths of us raise. Occasionally in summer I drop a lump of lime into the water and let them try the lime-water, and also make them cayenne pills whenever I notice them drooping or their discharges showing symptoms of diarrhoea. Gapes come from drinking foul water, living in dirty quarters, and want of good food, properly given. The best cure for this and all other diseases chicken flesh is heir to, is prevention—in this case, an ounce of prevention being worth a good many pounds of cure. Give them good, wholesome food, healthy,

clean quarters, pay some decent regard to their comfort, and my word for it, they will make you rejoice in the profitable gratitude they return you—you will be but little troubled with cholera or gapes, or any other pest, except the miserable chicken thief, and the best cure for him is a spring-gun, properly arranged to dose him when he makes his marauding attempt.—*Rural Register*.

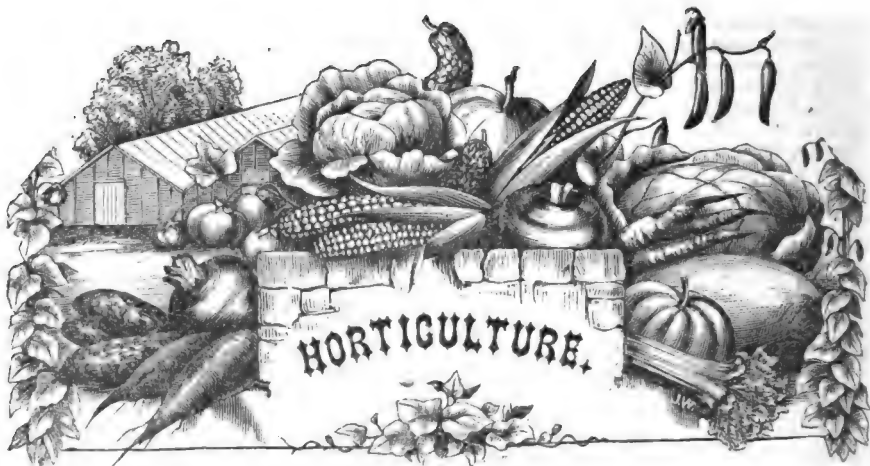
New Disease of Chickens.

The so-called "new chicken disease," mentioned in the *Prairie Farmer* of March 22d, may be found described by Tegetmeier, under the familiar term "Roup." This author considers roup in its first stages as identical with catarrh. He says: "The discharge from the nostril, however, soon loses its transparent character, becoming more or less opaque, and of very offensive odor. Froth appears in the inner corner of the eye. The lids swell, and in severe cases the eyeball is entirely concealed. The nostrils are closed by the discharge drying around them, and the eyelids are stuck together. The diseased secretion accumulates within to a great extent; consequently, the sides of the face swell to a great degree, and the bird, unable to see or feed itself, suffers from great depression and sinks rapidly."

The disease is very contagious. All affected fowls should therefore be removed immediately. I have tried many different remedies, but have found nothing better than merely to bathe the face with warm water and good vinegar, using two tablespoonfuls of the latter to one-half pint of the former. Wash off the nostrils and press out the discharges as well as you can, then bathe the parts freely and swab out the mouth with the diluted vinegar, and insert into the slit in the roof of the mouth a little of the same. Open the eyelids and drop into them a few drops also. This operation should be repeated daily, and has always proved effectual in cases taken in hand before the secretions have accumulated in the head to any great extent. In long neglected cases I have removed the mass of yellowish cheese-like substance, which had gathered in the sides of the head, by making an incision in the face below the eye, and then bathing the wound freely every day with the diluted vinegar. The fowl, while under treatment for roup, should be fed on soft food. Some writers recommend to give a tablespoonful of castor oil daily, but I have never found it necessary—in fact never tried it.

ILLINI, JR.

A correspondent of the *Germantown Telegraph* saves and prepares his hen-made guano in this way: In the hen-house, under the roost, there is a tight floor, and over this floor I spread dry, fine earth or muck, and occasionally as the manure accumulates, more earth is spread over it. My practice is to clean out in the spring and fall, and by having a supply of dirt to use when wanted, I manufacture and save, with very little labor or expense, a very valuable fertilizer.



The Vegetable Garden.

Diligent work in the garden during this month will bear abundant fruit. No vacant spaces or waste ground should exist within the enclosure. The ground from which the early crops have been taken should be at once turned to account by planting it in late cabbage, cauliflower, brocoli and winter beets. Continue to plant English peas for a succession. The blue imperial and the marrowfat are excellent varieties and do well in our climate.

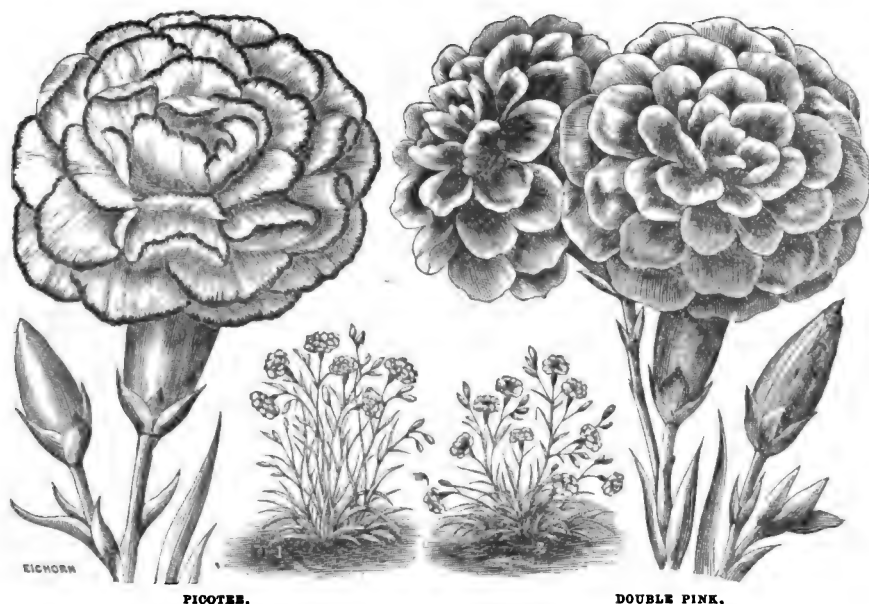
Plantings of corn for roasting ears should be made every two weeks. Also continue to plant tomatoes, snap beans, Lima beans, cucumbers, melons and squashes. In transplanting from the hot-bed let the work be done in the evening. Let the roots of the young plants be dipped in a thin paste of cow manure and rich soil and shelter them from the sun for two or three days with shingles. Be careful to thin out all growing plants so as to leave plenty of room for healthy and vigorous growth. Beets, carrots, parsnips, need judicious thinning. Top the young okra plants so as to make them bushy. Keep up the fight against the weeds by plying diligently the hoe and the hand-plow. Stir the soil continually, taking care, however, not to injure the fibrous roots of the plants. Thin melons and cucumbers, not leaving more than two, or at most three plants in a hill. Keep a sharp look out for the striped bug that preys upon the vines, and protect them against his assaults by dusting the hills with a mixture of guano and gypsum. When the vines begin to run, pinch the extremities, and thus make them fruit earlier. Continue to earth up celery, though Northern gardeners recom-

mend flat culture for celery plants, and regard trench cultivation as an exploded practice, our experience is that for the South the trench system is far the best. Hunt for the cut and the green worm among the cabbages. If this be neglected the worms will get all the cabbage and you will not get any. A mixture of common soot and ashes sprinkled over the plants while the dew is on them is a good protection against worms. See that the laundress preserves all the soapuds for the garden—vegetables and flowers. If the weather is dry, as is often the case in May, use the watering pot freely. Drought is fatal to vegetables. We recommend our friends to provide themselves with a hand-plow. It is just the thing to stir the soil without going too deep, and while it is as easily used as a hoe, it will do far more work in a given time. It is an inexpensive implement, and with ordinary care will last for years.

Thinning Vegetables.

We have already made frequent allusion to the necessity of thinning in order to have fine vegetables; and did we not know by experience how great an effort it requires to pull up fine, vigorous plants and vines, we would not now recur to the subject. This is the last month in which thinning will do any good. We therefore urge every gardener to thin every crop which stands too thick to mature perfectly. A hundred carrots or beets in a row with plenty of room will be worth more than double the number if crowded.

Prospects for a large sugar crop in Louisiana become more favorable as the season advances.



The Flower Garden.

It is now quite safe to transplant to the places where they are to remain all the half-hardy and tender annuals, biennials and perennial seedlings. In dry weather water them every evening. Prune all free-growing roses, like the Lamarque, and stimulate those of slow growth, like the Malmaison, by watering with liquid manure, taking care to dilute it well with water. If it be applied too strong it will be an injury instead of an advantage. Tender plants which may have been bitten by April frosts should be pruned below the injured part. Tall-growing dahlias ought to be topped, and all dahlias should be staked and tied with strips of matting. When the leaves decay, take up all flowering bulbs and store them away in a dry dark place until the time comes to plant them out in the fall. Their places should be filled with summer blooming plants. Now is the time to prune those shrubs which have ceased to bloom. Remove all withered blooms and seed-pods. When the latter are left to mature the blossoming power of the plants is weakened. Besides it is more tidy to remove them. Keep the grass borders and the lawn continually shorn. This is the way the "velvet lawns" we read about are obtained. Where the lawn is large enough to warrant the expense, a "lawn-mower" will be found very useful.

The Orchard.

The chief work in the orchard now is to exterminate the insects, to remove superfluous fruit and check too rapid growth. Where

fruit is too thickly set it loses more in quality than it possesses in quantity. We have frequently seen half the crop removed and the remaining half amply repaid for the apparent sacrifice. The same is true of grapes. If mildew, or as it is technically called *oidium*, appears, the sulphur remedy is said to be a certain cure. On this subject we copy the following from a recent copy of the *Canada Farmer*, which will be found interesting by all grape growers:

SULPHUR FOR GRAPEVINES.—An inquiry in Australia as to the use of sulphur on grape-vines for curing the *Oidium*, brought out the following responses from correspondents, which will interest and instruct Canadian grape-growers:

"For the information of those interested in vine-growing, I would state that sulphuring is the best known remedy against the *Oidium* Tuckeri (vine disease). I use three parts wood ashes, two of sulphur, and one of lime, mixed together, and find that it answers remarkably well. This mixture is laid on with a sulphuring bellows, as follows: The first time is done now, after close pruning; the second time just before the buds burst; the third time when the blossoming is over, or nearly so; the fourth time when the fruit is about the size of a pea; the fifth time when the fruit is about half grown; the sixth and last time when the fruit is about ripening. Whenever a shower of rain has washed off the mixture, the sulphuring must be repeated.

"This is my experience, and I am satisfied with the result.—C. F. GERLER."

"In response to the request for information concerning the best means to prevent the

Oidium, or grape-vine disease, I have to state that last year I used sulphur and ashes on part of the vineyard; on the other part, lime slaked with strong brine. Where I used the lime was on the part of the vineyard that was the worst affected with the Oidium. The difference is plain to any one. The canes are bright and clean, where, before using lime, the tops were rotten half way down. This year I shall use lime and brine over the whole of the vineyard. The mixture should be used as soon as the buds begin to open, and not sparingly.—W.S."

"I give you my experience as a practical gardener, and my management of vines:

"When I have done with the pruning, I scrape all the old bark off with a scraper, and clear away the earth from the vines, not to disturb the surface roots. I then paint the vines all over with my own compound, viz.: steep one pound of tobacco in three quarts of hot water, to extract the juice; strain off the juice; cut down three pounds of soap very small; put the tobacco juice and soap into a pot, and put it on a slow fire to melt the soap; when it is melted, add one-half pound hellebore, and two pounds sulphur. Stir the mixture well; then empty it into a small box. It will keep for any length of time. To use this mixture, dissolve about one-half pound in water to the thickness of paint, and with a paint-brush paint the vines all over. It will remain on the vines for twelve months, and is a perfect cure.—WILLIAM DAVIDSON."

The Strawberry Bed.

Keep down all grass and weeds. Cut off all runners as fast as they make their appearance. If you want fruit you cannot have runners. Water abundantly in dry weather. If you are too lazy to take this trouble, you must be content to do without strawberries; but if you are willing to take it, you can secure a supply during the entire summer.

Vegetable Humus and Chemical Fertilizers.

EDITOR FARMER AND GARDENER.—Prof. Ville admits that the most perfect chemical fertilizer, when applied to a soil entirely deprived of vegetable humus, will fail to produce full crops. Will this vegetable humus, then, supply those constituents of vegetables which science does not discover in the ashes of the plants we cultivate, because they escape in the form of gases?

If that is so let us have all possible light as to the best practical means to keep up the supply of humus, or to produce it where it is absolutely failing. That fertilizers are not the only thing that the roots of plants are after is well demonstrated in the fact that the roots (in pot culture) will ever line the inner surface of the pot instead of feeding on the rich mold inside. The use of burnt or baked clay has been advocated in England and other countries, but it seems doubtful that it is the substance of

the flower pot that attracts the roots to it, since the same fact is noticed in vessels of various kinds. How does vegetable physiology account for it? Your most assiduous reader,

EVERGREEN.

NOTE BY THE EDITOR.—Chemical fertilizers, as we have frequently stated, are adjuncts to successful agriculture, but in numerous instances they are considered sufficient to perfect a crop. We have unfortunately too many practical demonstrations of their inefficiency when applied to soils improperly prepared to receive them, and which substantiate the assertion of Prof. Ville. Our worn-out old fields, where all the vegetable matter has been removed by a series of exhaustive crops, are incapable of returning any profit from the application of chemical fertilizers until vegetable matter has been returned to the soil by the plowing in of green crops or the application of stable manure, leaves, or any matter that, by its decomposition, will bring humus.

We have been told by vegetable physiologists from time immemorial that plants feed both by their roots and by their leaves. The solid plant food which is amalgamated with the soil is converted in a more soluble form by its contact with the earth, and absorbed by the roots of plants, but this alone is not sufficient to perfect the plant. Other food is derived from the air, and in such vast quantities that it is demonstrated beyond dispute, that were plants to derive their food solely from the earth, a single crop of corn would be sufficient to drain the soil of every vestige of potash it contains, and render that soil incapable to produce another crop of grain, unless a sufficient proportion of the exhausted constituent is replaced artificially. Experiments have been made where it was demonstrated that a willow tree planted in a vessel containing a certain amount of earth had, after a number of years, increased in weight to more than three times the amount of loss of weight of the earth; hence its food had been derived from the air in the greater proportion. In the application of fertilizers, reference should always be had to using materials easily converted in plant food, as well as containing elements which by their action upon the atmosphere secure an additional amount of nutrition necessary to perfect vegetable life. When the soil contains constituents which have the power to attract nitrogen, successful results can always be depended upon, an infinitesimal quantity of an attractive element being present in the soil is sufficient to secure this combination. It has been demonstrated that the amount of nitrogen or azote contained in plants is from eleven to forty per cent. in excess of that which could have been furnished by artificial fertilizers. But the manner in which this is absorbed by plants has not been elucidated. Whether this is absorbed by the leaves or is brought by the water taken up by the roots is not fully proven.

The roots of plants grown in pots always seek the outer part of the ball of earth from the necessity of absorbing the atmospheric gases needed for their development, the porosity

of well-made pots enabling them to promote this object. Hence we find that plants placed in glazed pots, which are impervious to air, never thrive, from the fact that a great source of supply of food is taken from them.—*P. J. Berckmans, in Farmer and Gardener.*

The Melon Patch.

If the water and muskmelons have been properly planted they will soon begin to form fruit. Leave only three plants in a hill, and do not allow one plant to mature more than two melons. Rub off all others. Those that are left will be worth the entire lot had they been left to ripen. Never move the vines when they are worked. If the ground was properly prepared, after the vines begin to run they need no further hosing.

Should Orchards be Cultivated?

Quite a discussion has lately arisen on the question whether it is better to cultivate, that is, plow and harrow the ground in our orchards, or to seed them down and let the ground lie undisturbed. As experiment alone can satisfactorily solve the problem, fruit growers have been requested to give the result of their experience, throwing light upon the subject. Responding to this request, a correspondent of a cotemporary writes thus:—

"I have several orchards about fifteen or twenty years old, that have always been kept in sod, and received no other attention than a slight pruning every two or three years, and an occasional load of manure or ashes as a top-dressing. As a consequence, we never had a bushel of perfect fruit up to the year 1870. The trees bore pretty good crops, but the fruit was small, wormy at the core, and knotty, while the trees themselves looked very badly. The soil in all of them is a black gravelly loam; the trees consist principally of Bellefleur, Smokehouse, Green Pippins and Romanites. In the fall of 1870 I plowed the ground in one orchard, containing about thirty trees, to a depth of five inches, gave it a good dressing of manure, and trimmed the trees carefully. Since that time I have kept the ground cultivated and the trees carefully trimmed and scraped, and each year have noticed a marked improvement in both trees and fruit until this fall, when I had the satisfaction of sending to market the finest lot of Bellefleur and Smokehouse apples ever seen in this section, and which I readily sold at \$1 25 per bushel, while apples were selling all through our streets at from 30 to 70 cents. The fruit was large, rich flavored and high colored, while from the trees growing in sod I did not get ten bushels of first class apples. This, I think, proves very clearly the importance of cultivating the ground and scraping the trees regularly and carefully, as by so doing we can most effectually destroy the harbor of all the insects injurious to the apple, besides giving the trunk and limbs a

healthy, smooth bark, under which the sap can flow freely in sufficient quantities to ripen perfect fruit."

Now the experiment in this case throws no light on the question at issue. The orchard had simply been neglected, had only an occasional load of ashes or manure and a slight pruning once in two or three years. Before the question can be fairly tested, the orchard should have all the manuring, scraping and pruning which it requires without plowing or disturbing the soil. After having taken care of it in this way for a number of years and results noted, then the ground might be plowed, harrowed and cultivated every year for a like length of time, and if any difference were noticed it might with some show of reasoning be attributable to the stirring of the soil. But that the products of an orchard which has been manured, pruned, scraped and cared for, should be better in quality and quantity than of one that was not systematically cared for, with or without stirring the soil, was a result most certainly to be expected.

Our advice is not to seed down an orchard of young, growing trees, but to stir the soil with the plow and cultivator, until the trees have attained nearly their full size, then the orchard may be seeded down, and the growth allowed to remain and decay on the ground, not cut and carried away. At the same time, the trees should receive such supply of manures, ashes, &c., as will keep them in good healthy condition, with a regular annual washing of the bark with a solution of potash or weak lye, and pruning as may be needed. We believe that when the trees have become large and the roots have filled the ground, it is better not to use the plow in the orchard; but to keep up its vigor and productiveness by taking nothing away from the soil except the apples, and applying to the surface such fertilizers as may be needed. The trouble is that when the orchard has been seeded down, all care and attention cease, pruning is done by fits, no fertilizers are applied, or if at all, without any regularity, and the whole thing is left to take care of itself.—*Canada Farmer.*

To Make Pear Trees Fruit.

Many persons complain that pear trees are so slow in coming into bearing, and indeed this experience has found expression in the proverb "Plant pears for your heirs." This is not true of all varieties, however, as every one knows who has cultivated the Bartlett pear, for example. Mr. D. W. Coit says that refractory sorts, such as the Dix and Urbaniste, can be brought into bearing early by securing, at first, a good healthy growth of well ripened wood, by means of thorough cultivation, and then after the tree has attained to a suitable size, any branch may be thrown into bearing by cutting it back during the early part of summer. This will make the eyes that are left form rosettes, throwing out four or five leaves. Sometimes these become blossom buds, and fruit the next season, but at the farthest are certain to blossom the third year.

Household Department.

Domestic Receipts.

BREAKFAST ROLLS.—Two pounds of flour; one quarter of a pound of butter; three Irish potatoes; one gill of good yeast, and a little salt. Let them rise all night.

HOTCH POTCH.—Take any cold meat; chop or slice fine, season with salt and pepper, or sage if liked; add to this half as much stale bread, or potatoes that have been boiled; stir them well together, and inclose it in a crust, as for chicken pie. Bake one half hour.

GINGER CRACKERS.—One pound of butter; one pound of sugar; one pint of molasses; and one teaspoon of soda, dissolved in a teacup of milk; four tablespoons of ginger; and flour enough to roll them out.

BAKED BEANS.—Two quarts of small white beans; two pounds of salt pork, or if very fat, one pound will be sufficient, and one spoonful of molasses; pick the beans over carefully, wash, and add a gallon of boiling hot soft water; let them soak in it over night; in the morning put them in fresh water and boil gently till the skin is very tender and about to break, adding a teaspoonful of soda. Bake them up dry, and put them into your dish; stir in the molasses, gash the pork, and put it down in the dish, so as to have the beans cover all but the upper surface; turn in boiling water till the top is just covered; bake with a steady fire four or five hours; watch them and add more water from time to time as it dries away.

CHEAP CAKE.—One tablespoonful of butter; one egg; one cup of sugar; one-half cup of buttermilk; one-half teaspoon of soda, and flour enough to make a batter as for pound cake. Flavor with lemon. Eat while warm, with wine sauce; it makes a very good dessert.

BOILED BATTER PUDDING.—Two cups of milk; four eggs; stir in flour until a stiff batter; a little salt. Let it boil nearly two hours.

DRIED BEEF.—Slice dried beef very thin, put it into the frying pan with water sufficient to cook it tender; add new milk with a small bit of butter; let the milk come to a boil; stir in a well-beaten egg, and a little flour previously wet with cold milk, and let it boil long enough to cook the flour. This makes a simple breakfast dish.

How to Cook Egg PLANT.—Peel and cut the plant in thin slices; soak in salt and water half an hour; drain them, and steam five minutes. Make a batter of one pint of sweet milk, half cup of butter, two eggs, one teaspoonful of cream tartar, half ditto of soda; mix with flour to the consistency of batter cakes; dip the slices into the batter and fry slowly in butter till a light brown; season highly. They are nice for breakfast or dinner.

CUCUMBER CATSUP.—Pare ripe cucumbers and grate them, seed and all, and to three pints of the pulp removed from the juice of the cu-

cumber add one pint of good cider vinegar, salt, and pepper to the taste, and, if agreeable, a little onion. As soon as made it is ready for use. Keep in a cool but not damp place.

TO TAKE STAINS OUT OF SILVER.—Steep the silver in soap lye for the space of four hours; then cover it with whiting wet with vinegar, so that it will lie thick upon it, and dry it by a fire, after which rub off the whiting and pass it over with dry bran, and the spots will not only disappear but the silver will look exceeding bright.

BONE FELON.—Of all painful things can there be any so excruciatingly painful as bone felon? We know of none that flesh is heir to. As this malady is quite frequent, and the subject of much earnest consideration, we give the last recipe for its cure, which is given by that high authority, the *London Lancet*. "As soon as the disease is felt put directly over the spot a fly blister, about the size of your thumb nail, and let it remain for six hours, at the expiration of which time, directly under the surface of the blister, may be seen the felon, which can instantly be taken out with the point of a needle or a lancet."

CANNING FRUIT.—A good general rule, in canning fruit, is to use one pound of sugar to four pounds of fruit, and enough water to keep it from burning. The cans should be soldered, or sealed with sealing wax or cement made of equal parts rosin, beeswax and tallow. Sealing wax is best for such cans as have grooved rims:

	Time for boiling fruit.	Quantity sugar to qt.
Cherries	5 min.	6 oz.
Raspberries	6 "	4 "
Blackberries	6 "	6 "
Strawberries	8 "	8 "
Plums	10 "	10 "
Whortleberries	5 "	8 "
Pie Plant, sliced	10 "	8 "
Small sour pears, whole	30 "	4 "
Bartlett pears, halves	20 "	6 "
Peaches	8 "	4 "
Pine Apple, sliced	15 "	6 "
Siberian, or Crab Apple	25 "	8 "
Sour Apples, quarters	10 "	5 "
Ripe Currants	6 "	8 "
Wild Grapes	10 "	8 "
Tomatoes	20 "	none.
Gooseberries	8 "	8 oz.
Quinces	15 "	10 "

LAUNDRY POLISH FOR LINEN.—Add to starch made in the usual way a small lump of white sugar, or a bit of white wax or spermaceti, or a few thin shavings of white soap and a teaspoonful of salt. After the clothes are rinsed in blue water, starch them, and dry on the clothesline; then ring them from cold water, roll up tightly, and let them lie awhile. Iron smoothly in the usual way. Then place the bosom, or piece to be polished, on a board with a single fold of muslin over it, pass a damp cloth over the linen, and polish with an iron made for that purpose, such as may be bought at the hardware or kitchen furnishing stores.

The Southern Farm and Home.

MEMPHIS, TENN., MAY, 1873.

WM. M. BROWNE, - *Editor and Proprietor.*
BOYLE & CHAPMAN, - - - *Publishers.*

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

Patrons of Husbandry.

We see that the farmers of the South are organizing in almost every State lodges or granges of the order of Patrons of Husbandry.

We have been shown by a friend a copy of the constitution prescribed for these granges, and find nothing to which exception can be taken, while the objects of the organization are eminently praiseworthy. As far as we have been able to learn, the objects of the order are the protection and enlightenment of the farmer, the establishment of direct communication between producer and consumer without intervention of middlemen, and the frequent social intercourse of farmers one with another.

We can strongly approve all these purposes as we have always advocated them as essential to the welfare of the farming interests of our country.

Those who are more conversant with the rules and plans of the order, and desire to present its advantages, are invited to do so through the columns of the **FARM AND HOME**.

The Farmers and the Railroads.

The movement of the farmers to redress the wrongs inflicted on them by railroad monopolies in the shape of extortionate freights and unfriendly discriminations, is attracting the attention of the people all over the country. It is plain that the farmers are in earnest, and though they may not find at once the proper remedy for the wrong of which they complain, they will not relax their efforts until they do find it. That their complaints are just and their grievances almost intolerable, cannot be truthfully denied, but we doubt whether the Government at Washington being authorized to take control of the railroads and regulate freights, as we see recommended, would be either a wise or an efficient remedy. We have enough of centralization. Its fruits so far have

not been nourishing or palatable. The State legislatures which have given existence to these railroad companies, have the power to control, and by good and fair legislation may do away with the oppressive exactions of the monopolies, while at the same time due regard is had to the interests of the railroads, the value of which to agriculture is immeasurable.

In the present contest, so far as its merits are concerned, we are altogether on the side of the farmers, because they are grievously oppressed. If the railroad companies are wise they will not disregard the movement, but will make fair concessions. The farmers united are a force which all the locomotives of all the railroads cannot overcome or resist.

KING'S CURE FOR CHICKEN CHOLERA.—We request the attention of our readers to the advertisement in another column, of a cure for chicken cholera, which has been discovered by Dr. Wm. King, Jr., of Athens, Ga.

We are well acquainted with Dr. King. He is a physician of established reputation, an accomplished chemist and druggist, and a gentleman of high character and standing. Although we have no experience of the merits of his cure for chicken cholera, we are satisfied from our faith in Dr. King's word that it is all he represents it to be.

LOUISIANA STATE FAIR.—We are indebted to the President and Secretary of the Mechanics' and Agricultural Fair Association of Louisiana for an invitation to attend the Seventh Annual Fair, which took place at New Orleans during the week commencing April 23d. We regret our inability to be present, as we learn it was a most interesting exhibition. The invitation reached us too late for acknowledgment in our April number.

NOTA BENE.—We receive letters almost daily from all parts of the South, asking at what price we sell all sorts of seeds, agricultural implements, fancy fowl, fruit trees, shrubs and a number of other articles. We have not time to answer these letters severally, but repeat here what we have already frequently stated, namely, that we do not sell any of these things, nor have we the remotest interest in any establishments which do sell them. If persons desiring to purchase will read our advertising columns they will learn where their wants can be supplied by direct communication with the advertisers.

HUNT'S FAN AND FLY-DRIVER.—Warm weather, flies and mosquitoes will soon be upon us. The Fan and Fly-driver will afford relief. We have used one for the last two summers, and find it the most effective fan, as well as the best protection against flies and mosquitoes that we have ever seen. The inventor, Mr. J. P. Hunt, lives at Clinton, Jones county, Ga., who will furnish the instrument at reasonable rates to all who apply for it. County and State rights can be purchased by application to the editor of the FARM AND HOME, Memphis.

THE CROPS.—Our accounts represent the wheat crop as very unpromising; corn, what there is of it, looking well and healthy, and cotton as well up and chopped to a stand. We sincerely regret to learn that the area planted in cotton exceeds that of last year, and that less corn has been planted. We have so often and strenuously opposed this system, as ruinous to the planter and to the whole population, we can only deplore such a state of things. We hear that a larger number of planters than in any previous year are asking their factors to make them advances to buy corn and meat to make the growing crop. We are not surprised at this. It is a necessary result of the improvident neglect of provision crops to make a large cotton crop. When planters have to borrow money in April at present rates of interest to buy provisions, it is manifest that they must lose money and be poorer this time next year than they are now.

The late frosts and cold weather have, it is reported, seriously injured fruit in the northern parts of the South; but in the more southern latitudes the crop is represented to be abundant.

BIBB COUNTY (GA.) AGRICULTURAL SOCIETY.—We had the pleasure to receive a visit recently from Colonel B. Lewis, of Macon, Ga., one of the directors of the Bibb County Agricultural Society, from whom we learned the gratifying intelligence that the coming Fair of that Society will be unusually interesting, and that the farmers of Bibb county are going to make a vigorous effort to carry off the \$1000 prize offered by the State Agricultural Society to the county which makes the best show at the fall fair. We wish our Bibb country friends a full reward for their enterprise.

R. G. CRAIG & Co., Main street, Memphis, Tenn., have our thanks for a package of choice flower seeds and some summer-blooming bulbs.

SUBSCRIBERS are particularly requested to comply with our continued injunction not to remit money by mail, but to send postoffice money orders or bank checks, or to remit by express or registered letters. Where they neglect this warning they do so at their risk, as we will not be accountable for remittances sent in any other way.

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWNE, Memphis, Tenn.

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the FARM AND HOME and any of those papers at the subjoined reduced rates:

FARM AND HOME and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
FARM AND HOME and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
FARM AND HOME and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
FARM AND HOME and <i>Columbus (Miss.) Democrat</i>	\$3 00

In addition to these we can furnish the FARM AND HOME and any one of the following valuable periodicals at the following prices:

FARM AND HOME and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
FARM AND HOME and <i>Southern Magazine</i> , per annum	\$5 00
FARM AND HOME and <i>Harper's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Appleton's Journal</i> , per annum.....	\$5 00
FARM AND HOME and <i>Hearth and Home</i> , per annum.....	\$3 50

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

THE GENERAL R. E. LEE MONUMENT.—The grand monument to the memory of General Lee is now rapidly being constructed under the direction and skill of Prof. Volentine. And in order to complete it at the earliest possible day, the Executive Committee of the Lee Memorial Association, of Lexington, Va., which is composed of such distinguished men as Gen. Pendleton, Gen. Terry, Hon. Wm. McLaughlin, Col. Preston Johnston, Chas. Davidson and others, have authorized the publication and sale of a perfect *life-size* steel engraved portrait of General Lee. The proceeds of its sale to be applied in furtherance of the object of this Association, namely: to the erection of a monument to the memory of General R. E. Lee, at the Washington and Lee University, Lexington, Va. The portrait will be sold only by subscription, through regular authorized agents. Every subscriber for the portrait will receive a certificate signed by the Secretary and Chairman of the Lee Memorial Association. We commend this portrait to the public, and hope some good energetic man will secure the agency in this section in order to help on the good work. Messrs. W. W. Bostwick & Co., Nos. 177 and 179 West Fourth street, Cincinnati, Ohio, have been constituted and appointed General Managers of Agencies, and any communications addressed to them for circulars, terms and certificates, will receive prompt attention.

Answers to Correspondents.

ITCH IN SHEEP.—J. C., Forsyth county, Ga., asks what will cure itch in sheep, and what will prevent their taking it.

An ointment made of kerosene oil and lard rubbed in after shearing will effectually cure itch. Powdered charcoal and flour of sulphur administered to the sheep occasionally in their food will prevent the itch, in the opinion of experienced sheep-tenders.

EXPENSE OF A TRIP TO VIENNA.—H. F. M., Ouachita county, Ark., wishes to know the least money it will cost to go first-class to Vienna, spend a fortnight at the Exposition, and return.

We do not think that the trip could be made comfortably for less than \$500 in gold, and even to make that sum suffice some economy would be necessary.

SCARLET CLOVER.—D. C., Haywood county, Tenn., wants to know whether scarlet clover, alluded to in former numbers of the *FARM AND HOME*, is a valuable crop, when the seed should be sown, how many pounds per acre, and where the seed can be bought.

We regard scarlet clover (*Trifolium incarnatum*) as a very valuable crop. It gives abundant green food for stock in the early part of March, and can be cut for hay as early as lucerne. The seed should be sown in August, on rich and well-prepared ground. Sixteen or

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eighteen pounds of seed are enough to sow an acre. We do not know where the seed can be bought at the South, but we have no doubt if R. G. Craig & Co. do not have them, they will import them, if requested.

WHITEWASH FOR FENCES.—S. N. D., Houston county, Ga., writes:

"I have been a reader of the *FARM AND HOME* for two years past, and though not a farmer, yet living on a country farm, I feel much interested in these days about what the farmers accomplish. I have been an invalid from my youth, and learned to work in a cabinet shop because I was not able to plow. I have just finished putting up about 1600 palings, and I wish to whitewash them. Will you be so kind as to furnish me through your paper the best and cheapest receipts for such work. I learned what little I know of mechanics at home and by experience. I have just put up a heavy and strong work-bench. What is the best color for it? Will you give any good receipt through the *FARM AND HOME* for coloring, staining, varnishing, or whitewashing. I shall be greatly obliged and benefited thereby."

There are several receipts for making whitewash, but we know none better than the following: Put half a bushel of lime in a clean, water-tight cask. Pour boiling water on it until it is slaked, stirring it continually. When thoroughly slaked, dissolve it in water, and add two pounds of sulphate of zinc and one of salt, mixing all these ingredients well together. By adding two or three pounds of yellow ochre, a nice cream color will be produced. For lead color, a similar quantity of lampblack; for stone color, four pounds of American umber and two of lampblack; crude petroleum and yellow ochre or umber will make a good mixture to stain pine timber.

MANURE FOR COTTON.—H. L. L., Whitekirk, N. C., writes:

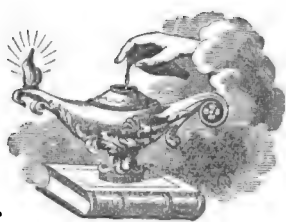
Please answer the following question in your next number of the *FARM AND HOME*: "What kind of manure is most dominant in the growth of cotton?"

If by this question our correspondent wishes to know what is the predominant ingredient in the composition of the fiber, stalk and seed of cotton, we answer, potash, and therefore the presence of potash in the soil in sufficient quantity is essential to the healthy growth of cotton. Hence in all artificial manures for cotton, potash is one of the chief ingredients.

ITALIAN BEES.—Mrs. C., Bibb county, Ga., asks where and how she can best procure Italian bees.

We regret our inability to answer the question, as those who have Italian bees for sale have not thought proper to inform us of the fact. Our friend, Mr. W. Brantley, of Macon, Ga., who is an experienced apiarist, will, we have no doubt, give our correspondent the information she needs.

Literary Department.



EDITOR'S BOOK TABLE.

IS DAVIS A TRAITOR: OR WAS SECESSION A CONSTITUTIONAL RIGHT PREVIOUS TO THE WAR OF 1861? By Albert Taylor Bledsoe, A. M., L.L. D. 12mo, pp. 263. (Innes & Co., Baltimore.)

The above is the title of a book now on sale at the book-store of Boyle & Chapman, Main street, and is, we believe, the greatest work of the greatest political writer of our country. In astonishingly small space for the discussion of such a subject, it presents an exhaustive argument of the nature of the Government of the United States according to the intent of the Constitution of 1787, and clearly exposes the fallacy of those who have attempted to pervert its original meaning. There are many among us who idly refer to the great questions in controversy between the strict constructionists and the consolidationists, as "dead issues," and who therefore reject all investigation into the history and purposes of the government formed by our fathers, as speculative inquiries of no practical value. If the Government we inherited be as all once believed, best calculated to secure the happiness and promote the welfare of the people, inquiry as to the true construction of the Constitution can never cease to be both proper and important. If the federative system be that best suited for the higher development and greater prosperity of the people, which we have the highest authority for believing, as such was the form of government which God gave to his chosen people, then there can be no more lasting obligation upon the successors of the men of '76 than the maintenance of the principles on which the union of independent States was founded.

The modern dogma that the will of the majority is the law of the land, is in no degree authorized by the debates and conclusions of the men who formed the fundamental law of compact between the States. The history of the convention which framed the Constitution, and of the State conventions by which it was ratified, is clearly brought out by Dr. Bledsoe in the remarkable book now before us, and both by positive and negative testimony his deductions are irresistibly established. As a justification of the wisdom of the men who framed the Government, as a full vindication of the heroic struggle of the South to preserve for that Government its original character, and as instructive of the rising generation, we be-

lieve that this book should be generally read and carefully studied, and trust that Southern men will not decline the task because they are already satisfied of the justice of their cause. Their faith will not be the less for knowing the reason on which it is founded.

For perfect accuracy in its statement of facts, close reasoning, logical argument and clearness of style, this work is not surpassed by any book in our language. It is in our opinion the best treatise on the Constitution of the United States that ever was written.

PASCAREL; Only a Story. By Ouida. (Lippincott & Co.) We are indebted to Boyle & Chapman for a copy of this, the last work from the pen of the gifted author of "Chandos," "Granville de Vigne," "Idalia," "Under Two Flags," "Strathmore," &c. While we have always recognized the talent, fertility of imagination and wonderful descriptive power displayed in all of Ouida's books, we have always been compelled to condemn their immorality, irreligion, cynicism and hideous pictures of female character. This is by far the least objectionable of her writings. Indeed it is the best, though as a story it can scarcely be said to be one. It has no plot and has no characters except Pascarel, the strolling player, and 'Ino, the deserted daughter of a Veronese nobleman, who attaches herself to Pascarel and accompanies him in his wanderings. The merit of the book lies in its wonderful pen-pictures of Northern Italy, and especially of Tuscany, with all its grand traditions and grander men brought out in bold relief and with matchless skill. It is a lovely panorama shifting slowly to the sound of exquisite music, each scene being a gem in itself, and only surpassed in beauty by that which succeeds it. What, for instance, can be more beautiful than the following description of early summer among the hills of Tuscany:

"Come out here in the young months of summer and leave, as we left, the highways that grim walls fence in, and stray, as we strayed, through the field paths and the bridle-roads in the steps of the contadini, and you will find this green world about your feet, touched with the Mayday suns to tenderest and most lavish wealth of nature.

"The green corn uncurling underneath the blossoming vines. The vine-foliage that tosses and climbs and coils in league on league of verdure. The breast-high grasses, full of gold and red and purple from the countless flowers growing with it. The millet filled with crimson gladioli and great scarlet poppies. The hillsides that look a sheet of rose-color, where the lupinelli is in bloom. The tall plumes of the canes, new born, by the side of every stream and rivulet. The sheaves of arm-leaves that thrust themselves out from every joint of masonry or spout of broken fountain. The flush of roses that burns on every hand's-breadth of untilled ground, and springs like a rainbow above the cloud of every darkling roof or wall. The ocean spray of arbutus and acacia shedding its snow against the cypress

darkness. The sea-green of the young ilex leaves scattered like light over the bronze and purple of the older growth. The dreamy blue of the iris lilies rising underneath the olives and along the edges of the fields. The soft, pretty, quiet pictures, where mowers sweep down with their scythes the reedy grasses on the river-banks; where the gates of the villas stand wide open, with the sun aslant upon the grassy paths beneath the vines; where in the gloom of the house archways the women stand plaiting their straw, with the broad shining fields before them all alive with the song of the grills; where the gray savage walls of a fortress tower on the spur of the mountains, above the delicate green of the young oaks and the wind-stirred fans of the fig trees; where the frate, in broad leaved hat of straw, brushes with sandaled feet through the bright acanthus, beaming a Rabelaisian smile on the contadina who goes by him with her brown water-jar upon her head; where deep in that fresh, glad tumult of leaf and blossom and bough the children and the goats lie together, while the wild thyme and the trefoil are in flower, and the little dog-rose is white among the maize; where the sharp beaks of the galley-like boats cut dark against the yellow current, and the great filmy square nets are cast outward where the poplar shadows tremble in the stream; all these, and a thousand like them, are yours in the sweet May season among the Tuscan hills and vines."

Throughout the five hundred pages of this book there are numbers of beautiful pictures like the above, accompanied by just enough of a story to give them life and action.

BREAD AND CHEESE AND KISSES. By B. J. Farjeon, author of *Blade o' Grass*, *Joshua Marvel*, &c. (Harper & Brothers.) Mr. Farjeon's first novels were successful. They were not of the highest order of art, by any means, but their story was forcibly told, and their characters were well drawn. We cannot say as much for the book before us. It is carelessly written, dull and uninteresting, and the long preface, which relates principally to himself, is offensively egotistical. Unfortunately for Mr. Farjeon, after the publication of "*Joshua Marvel*," it was suggested, in a notice of that really clever book, that he filled the place left vacant by the death of Dickens. This indiscreet praise has spoiled him. With care and diligence he might have become a second-class novelist; but a few more books like "*Bread and Cheese and Kisses*" will soon destroy the fame he had won by his earlier works.

THE WISHING CAP PAPERS. By Leigh Hunt. (Lee & Shepard.) Such is the title of a very pleasing volume of desultory gossip concerning men and things, which cannot fail to interest and amuse the reader. The papers of which the volume is composed are written in the happy style for which Leigh Hunt was distinguished. Among modern British essayists few occupied a higher place than Leigh Hunt, and though he never took rank among those who are called "popular writers," his contributions to many of the leading periodicals

of his day possessed a charm in their vigorous maintenance of truth and right, in their good nature, and their peculiarly happy descriptions of nature, which cannot be forgotten by those who remember him in his palmy day. The book now before us possesses this charm in a high degree. It is beautifully printed and bound by the publishers, Lee & Shepard.

HARPER'S MAGAZINE for May contains a number of ably written, entertaining and instructive papers, among the latter of which that on Vienna is especially noticeable. It will be of great value to those who contemplate a visit to the Austrian capital this summer to see the Exhibition. It is very well written, describes all the leading points of interest in Vienna and its suburbs, and is profusely illustrated by good wood engravings, the most interesting of which are those of the Palace of the Exposition.

THE SOUTHERN MAGAZINE for May is a very good number. A paper from the pen of Gen. Jubal A. Early disposes very conclusively of the romance in relation to Stonewall Jackson in a recent publication called "*Keel and Saddle*," by General Revere. The gem of the number is a scathing review by the accomplished editor, W. Hand Browne, of Caleb Cushing's disgraceful publication concerning the Treaty of Washington. The versatile ex-Attorney-General is very severely handled, and the misrepresentations, vulgarity, outrages against propriety and decency contained in his book, are exposed in a masterly manner. We like the Southern Magazine. Every one will like it who reads it. The publishers announce that to every subscriber who will remit \$4 50 they will send the Magazine and a copy of the steel engraving, "*The Burial of Latane*."

LIPPINCOTT'S MAGAZINE.—The May issue of this popular periodical has a well supplied and varied table of contents, which are as follows:

The Roumi in Kabylia; Our Home in the Tyrol, by Margaret Howitt; Wilmington, Del., and its Industries; Marie Farnette and Her Lovers; Salmon Fishing in Canada; A Princess of Thule, by William Black; At Odds, by Howard Glyndon; Philadelphia Zoological Gardens; Berrytown; Overdue; Queen Victoria as a Millionaire; Cricket in America; Our Monthly Gossip; Literature of the Day.

LITTELL'S LIVING AGE.—Three serials are now in course of publication in *The Living Age*, one by Mrs. Oliphant, one by the author of that charming story, "*Dorothy Fox*," and one by Lord Lytton, author of "*The Last Days of Pompeii*," "*My Novel*," "*The Caxtons*," etc. The numbers for April 12th and 19th also contain the following noteworthy articles; *Natural Theology*, *Contemporary Review*; The Two Fredricks, *Quarterly Review*; Lord Lytton, *Blackwood's Magazine*; The First Arctic Expedition to the Northwest, *Contemporary Review*; Ultramontaniam at Home and Abroad, *Spectator*; Germany and the Church of Rome, *Pall Mall Gazette*; Dr. Francis Lieber, *Revue de Droit International*; The Liberation of France, *Spectator*; with poetry and miscellany

Insurance Department.

From the Coast Review.

Forfeitures in Life Assurance.

The number of life policies terminating each year for several years past has been quite large. The modes of termination are, death, expiry, surrender and *lapse*; the latter being by far the most extensive. By the first three modes of termination the assured receive the full value of their policies, either in the payment of the policy itself, or the cash surrender value thereof; while by the latter mode, a certain per cent. of their premiums are forfeited to the companies. This per cent. aggregates a large sum annually, and is considered by the public as just so much clear gain to the companies. This is not the fact, by any means. Forfeitures, although they leave in the hands of the companies a certain sum of money, are nevertheless unprofitable to the companies. Lest this assertion should appear contradictory to the uninformed, we will explain the reasons why they are unprofitable.

First: The cost of life insurance for the first year is fully double the cost of the second, for the reason that the first year's commissions paid to agents are three times greater than the subsequent or renewal commissions; and, added to this item, there are medical fees, and many other incidental expenses which never occur after the first year, all of which, added to the death losses and other necessary expenditures, leaves scarcely enough, and in many instances not enough, to provide for the legal reserve.

Second: It is most generally the best risks which forfeit. No unhealthy man will give up his policy, unless he is forced to do so by actual inability to pay his premium; and hence, the risks remaining often call for an extra expenditure.

Third: As life insurance is based, not upon an individual life, but upon a large number of lives collectively considered, and as the permanency and success of all life companies depend upon the number and character of the risks assumed, it therefore becomes necessary for them to replace, with another risk equally as good, every one that may lapse during the year; and in order to do this, they must necessarily repeat the process again of paying large first year's commissions, medical fees, etc.

For these reasons it must be apparent to every man, that every policy lapsed in a life company is really an injury instead of benefit to the company, and that it is a result which the companies must deprecate. If the companies were to fail to provide good and suitable risks to fill the vacancies created by those which are constantly retiring, the result would be the rapid depletion of the number and amount of the risks already assumed, and the consequent decrease of the amount of premium income and the increase of the ratio of mortality caused by the disproportionate number of impaired risks remaining, would eventually lead to dis-

astrous results. Hence the necessity of filling these vacancies, and as the population of our country increases, so, also, will the demand for life insurance increase, thus obviating all fears or doubts about the ability of the companies, to not only supply these vacancies, but also to increase, year by year, the aggregate of their number and amount of their risks.

Forfeitures cannot, therefore, be considered profitable to company or policy-holder. But to the latter they are not near so unprofitable as they may at first sight appear, and as the public generally regard them. The policy-holder, although he may not have received back in cash any portion of the money paid out, has still received a certain financial value therefor in the risk assumed upon his life—a risk worth to his family just the amount that it has cost the company to carry it, which cost amounts, according to the various experiences of the companies, from 40 to 100 per cent. of the premiums paid for the first year. Every productive human life has a certain financial value. For instance, if a man earns \$2000 per annum from his business, on this coast, where interest averages ten per cent., he is the equivalent of \$20,000 to his family. In other words, they have a financial interest in his life to the value of \$20,000. Life insurance companies, in order to relieve his family of this individual risk, which they cannot afford to carry, assume the risk in that amount, charging therefor, on average, about one and three-quarters per cent. per annum. Hence the value of this risk, while it does not cost the company during the year quite the amount charged, is really worth all and even more to the family than the amount paid. In fire insurance, the property-owner does not expect a return of any portion of his premium at the end of the year, should he not be burned out, nor does he consider the money paid as lost to him. He gets value received in the indemnity furnished and considers the premium a part of the expenses absolutely necessary to make his capital safe and productive. Life insurance is designed to meet this same end; and the premiums paid for any year cover the financial risk involved in human life, just the same that fire insurance covers the financial risk of conflagrations. This idea then that forfeited policies are just so much money lost, is quite fallacious; and if those who lapse them would consider for a moment how many men die before the expiration of their first premium year, and that they were insured against the same event, they would be forced to acknowledge the fact.

As to the causes which lead to forfeiture, they are numerous; the principal one, however, being dissatisfaction, resulting from disappointment and from a misapprehension of the actual results and operations of life insurance. No man should enter into it in the first place without some knowledge of its principles and practices, and of what might safely be relied upon as to its final results. It should be entered into solely as a legitimate business transaction, with a reference only to the protection of dependent ones against suffering.

Poetry.

Lines.

BY FATHER RYAN.

Weary hearts! weary hearts! by the cares of life oppressed,
Ye are wandering in the shadows—ye are sighing for a rest;
There is darkness in the heavens, and the earth is bleak below,
And the joys we taste to-day, may to-morrow turn to woe.
Weary hearts! God is rest.

Lonely hearts! lonely hearts! this is but a land of grief;
Ye are pining for repose—ye are longing for relief;
What the world hath never given—kneel, and ask of God above,
And your grief shall turn to gladness—if you lean upon His love.
Lonely hearts! God is love.

Restless hearts! restless hearts! ye are toiling night and day,
And the flowers of life all withered, leave but thorns along your way;
Ye are waiting—ye are waiting, till your toilings here shall cease,
And your ev'ry restless throbbing, is a sad, sad prayer for peace.
Restless hearts! God is peace.

Broken hearts! broken hearts! ye are desolate and lone,
And low voices from the past o'er your present ruins moan;
In the sweetest of your pleasures there was bitterest alloy,
And a starless night hath followed on the sunset of your joy.
Broken hearts! God is joy.

Homeless hearts! homeless hearts! through the dreary, dreary years,
Ye are lonely, lonely wanderers, and your way is wet with tears;
In bright or blighted places, wheresoever you may roam,
Ye look away from earth-land, and ye murmur, "where is home?"
Homeless hearts! God is home.

Little Giffen.

BY DR. FRANK TICKNOR, OF COLUMBUS, GEORGIA.

Out of the focal and foremost fire—
Out of the hospital walls as dire;
Smitten of grapeshot and gangrene,
(Eighteenth battle and he sixteen);
Spectre, such as you seldom see—
Little Giffen, of Tennessee!

"Take him and welcome!" the surgeon said;
"Mach your doctor can help the dead!"
And so we took him and brought him where

The balm was sweet on the summer air;
And we laid him down on a wholesome bed,
Utter Lazarus, heels to head.

Weary war, with the bated breath,
Skeleton boy against skeleton death;
Months of torture, how many such;
Weary weeks of the stick and crutch!
Still a glint in the steel-blue eye
Spoke of a spirit that would n't die!

And did n't—nay, more! in death's despite,
The crippled skeleton *learned to write!*
"Dear mother," at first, of course, and then,
"Dear Captain," inquiring about the "men;"
(Captain's answer:) "Of eighty-and five,
Giffen and I are left alive."

"Johnston's pressed at the front," they say;
Little Giffen was up and away!
A tear, his first, as he bade good-by,
Dimmed the glint of his steel-blue eye;
"*I'll write if spared!*" There was news of fight,
But none of Giffen—he did not write!

I sometimes fancy that when I'm king,
And my gallant courtiers form a ring,
And each so thoughtless of power and pelf,
And each so loyal to all but self,
I'd give the best on his bended knee—
Yes, barter the whole for the loyalty—
Of Little Giffen, of Tennessee!

From the Dublin University Magazine.

SORROW.

Upon my lips she laid her touch divine,
And merry speech and careless laughter died;
She fixed her melancholy eyes on mine,
And would not be denied.

I saw the west wind loose his cloudlets white,
In flocks careering through the April sky;
I could not sing, though joy was at its height,
For she stood silent by.

I watched the lovely evening fade away,—
A mist was lightly drawn across the stars;
She broke my quiet dream,—I heard her say,
"Behold your prison bars!"

"Earth's gladness shall not satisfy your soul,
This beauty of the earth in which you live;
The crowning grace that sanctifies the whole,
That I alone can give."

I heard, and shrunk away from her afraid;
But still she held me, and would still abide.
Youth's bounding pulses slackened and obeyed,
With slowly ebbing tide.

"Look thou beyond the evening star," she said,
"Beyond the changing splendors of the day.
Accept the pain, the weariness, the dread,
Accept, and bid me stay!"

I turned and clasped her close with sudden strength,
And slowly, sweetly, I became aware
Within my arms God's angel stood, at length
White-robed and calm and fair.

And now I look beyond the evening star,
Beyond the changing splendors of the day,
Knowing the pain He sends more precious far,
More beautiful than they.

Winter Will Not Last Forever.

Winter will not last forever,
 Spring will soon come forth again,
 And with flowers of every color
 Deck the hillside and the plain;
 Lambs again in the fields are sporting,
 Birds re-echo from each tree,
 "Winter's gone! its days are ended!
 We are happy—we are free!"
 Hedge and tree again be budding,
 Again with leaves be covered o'er,
 Winter will not last forever;
 Brighter days are yet in store!

Sorrow will not last forever;
 Brighter days will come again,
 Joy our every grief succeeding,
 As the sunshine after rain:
 As the snow and ice in winter
 Melt at the approach of spring,
 So will all our cares and trials
 Joy and peace and comfort bring.
 When the heart is sad and drooping,
 Think, though you may be vexed and sore,
 Sorrow cannot last forever;
 Brighter days are yet in store!

JOHN GRANGER.

A GHOST STORY.

By the Author of "*Lady Audley's Secret*," &c.

CHAPTER I.

"Then there is no hope for me, Susy?"

The speaker was a stalwart young fellow of the yeoman class, with a grave, earnest face, and a frank, fearless manner. He was standing by the open window of a pleasant farm-house parlor, by the side of a bright-eyed, pretty-looking girl, who was leaning with folded arms upon the broad window-sill, looking shyly downward as he talked to her.

"Is there no chance, Susy—none? Is it all over between us?"

"If you mean that I shall ever cease to think of you as one of the best friends I have in this world, John, no," she answered; "or that I shall ever cease to look up to you as the noblest and truest of men, no, John, a hundred times no."

"But I mean something more than that, Susy, and you know it as well as I do. I want you to be my wife by and by. I'm not in a hurry, you know, my dear. I can bide my time. You're very young yet, and maybe you scarce know your own mind. I can wait, Susy. My love will stand wear and tear. Let me have the hope of winning you by and by. I'm not a poor man at this present time, you know, Susy. There's three thousand pounds ready cash standing to my name in Hillborough Bank; but with the chance of you for my wife, a few years would make me a rich man."

"That can never be, John. I know how proud I ought to be that you should think of me like this. I'm not worthy of so much love. It isn't that I don't appreciate your merits, John; but"—

"There's some one else, eh, Susy?"

"Yes, John," she faltered, in a very low voice, and with a vivid blush on her drooping face.

"Some one who has asked you to be his wife?"

"No, John; but I think he likes me a little, and"—

John Granger gave a long, heavy sigh, and stood for some minutes looking at the ground in dead silence.

"I think I can guess who it is," he said at last; "Robert Ashley—eh, Susy?" The blush grew deeper, and the girl's silence was a sufficient answer. "Well, he's a fine, handsome young fellow, and more likely to take a girl's fancy than such a blunt, plain-spoken chap as I am; and he's a good fellow enough as far as I know; I've nothing to say against him, Susy. But there's one man in the world I should have liked to warn you against, Susan, if I'd thought there was a shadow of a chance you'd ever listen to any love-making of his."

"Who is that, John?"

"Your cousin, Stephen Price."

"You need n't fear that I should ever listen to him, John. There's little love lost between Stephen and me."

"Is n't there? I've heard him swear that he'd have you for his wife some day, Susan. I don't like him, my dear, and I don't trust him, either. It isn't only that he bears a bad character up-town, as a dissipated, pleasure-loving spendthrift; there's something more than that; something below the surface, that I can't find words for. I know that he's very clever. Folks say that Mr. Vollair, the lawyer, looks over all his faults on account of his cleverness, and that he never had a clerk to serve him so well as Stephen does. But cleverness and honesty don't always go together, Susy, and I fear that cousin of yours will come to a bad end."

Susan Lorton did not attempt to dispute the justice of this opinion. Stephen Price was no favorite of hers, in spite of those good looks, and that showy cleverness, which had won him a certain amount of popularity elsewhere.

John Granger lingered at the sunny window, where the scent of a thousand roses came floating in upon the warm summer air. He lingered as if loth to go and make an end of that interview, though the end must come, and the last words must needs be spoken very soon.

"Well, well, Susy," he said presently, "a man must teach himself to bear these things, even when they seem to break his life up somehow, and make an end of every hope and dream he ever had. I can't tell you how I've loved you, my dear—how I shall love you to the end of my days. Bob Ashley is a good fellow, and God grant he may make you a good husband! But I don't believe it's in him to love you as I do, Susan. He takes life pleasantly, and has his mind full of getting on in the world, you see, and he has his mother and sisters to care for. I've got no one but you to love, Susan. I've stood quite alone in the world ever since I was a boy, and you've been all the world to me. It's bitter to bear,

my dear; but it can't be helped. Don't cry, Susy, darling. I'm a selfish brute to talk like this, and bring the tears into those pretty eyes. It can't be helped, my dear. Providence orders these things, you see, and we must bear them quietly. Good-by, dear."

He gave the girl his big, honest hand. She took it in both her own, bent over it, and kissed it tearfully.

"You'll never know how truly I respect you, John," she said. "But don't say good-by like that. We are to be friends always, aren't we?"

"Friends always? Yes, my dear; but friends at a distance. There's some things I could n't bear to see. I can wish for your happiness, and pray for it honestly; but I could n't stop at Friarsgate to see you Robert Ashley's wife. My lease of the old farm is out. I'm to call on Mr. Vollair this afternoon to talk about renewing it. I fancied you'd be mistress of the dear old place, Susy. That's been my dream for the last three years. I could n't bear the look of the empty rooms now that dream's broken. I shall surrender the farm at once and go to America. I've got a capital that'll start me anywhere, and I'm not afraid of work. I've old friends out there, too; my first cousin, Jim Lomax, and his wife, that went out five years ago, and have been doing wonders with a farm in New England. I shan't feel quite strange there."

"Go to America, John, and never come back!" said Susan, despondingly. She had a sincere regard for this honest yeoman, and was grieved to the heart at the thought of the sorrow that had come to him through his unfortunate disposition to be something more to her than a friend.

"Never's a long word, Susy," he answered, in his grave, straightforward way. "Perhaps, when a good many years have gone over all our heads, and when your children are beginning to grow up, I may come back and take my seat beside your hearth, and smoke my pipe with your husband. Not that I should ever cease to love you, my dear; but time would take the sting out of the old pain, and it would be only a kind of gentle, sorrowful feeling, like the thought of one that's long been dead. Yes, I shall come back to England after ten or fifteen years, if I live, if it's only for the sake of seeing your children, and I wager there'll be one among them that'll take to me almost as if it was mine, and will come to be like a child to me in my old age. I've seen such things. And now I must say good-by, Susy; for I've got to be up town at three o'clock to see Mr. Vollair, and I've a deal of work to do before I leave."

"Shall you go soon, John?"

"As soon as ever I can get things settled—the farm off my hands, and so on. But I shall come to say good-by to you and your father before I go."

"Of course you will, John. It would be unfriendly to go without seeing father. Good-by!"

They shook hands once more, and the yeoman went away along the little garden path, and across a patch of furze-grown common land, on the other side of which there was a straggling wood of some extent, broken up here and there by disused gravel-pits and pools of stagnant water—a wild kind of place to pass at night, yet considered safe enough by the country people about Hillborough, as there was scarcely any part of it that was not within ear-shot of the high-road. The narrow foot-path across this wood was a short cut between Matthew Lorton's farm and Hillborough, and John Granger took it.

He walked with a firm step and an upright bearing, though his heart was heavy enough as he went downward that afternoon. He was a man to bear his trouble in a manly spirit, whatever it might be, and there were no traces of his disappointment in his looks or manner when he presented himself at the lawyer's house.

Mr. Vollair had a client with him; so John Granger was ushered into the clerk's office, where he found Stephen Price hard at work at a desk, in company with a smaller and younger clerk.

"Good afternoon, Granger," he said, in a cool, patronizing manner that John Granger hated; "come about your lease, of course?"

"There is nothing else for me to come about."

"Ah, you see, you're one of those lucky fellows who never want the help of the law to get you out of a scrape. And you're a devilish lucky fellow, too, in the matter of this lease, if you can get Friarsgate farm for a new term at the rent you've been paying hitherto, as I dare say you will, if you play your cards cleverly with our governor presently."

"I am not going to ask for a new lease," answered John Granger; "I am going to leave Friarsgate."

"Going to leave Friarsgate! You astound me. Have you got a better farm in your eye?"

"I am going to America."

Stephen Price gave a long whistle, and twisted himself round upon his stool, the better to regard Mr. Granger.

"Why, Granger, how is this?" he asked. "A fellow like you, with plenty of money, going off to America! I thought that was the refuge for the destitute."

"I'm tired of England, and I've a fancy for a change. I hear that a man may do very well in America, with a good knowledge of farming and a tidy bit of capital."

"Ah, and you've got that," said Stephen Price, with an envious sigh. "And so you're thinking of going to America? That's very strange. I used to fancy you were sweet upon a certain pretty cousin of mine. I've seen you hanging about old Lorton's place a good deal of late years."

John Granger did not reply to this remark. Mr. Vollair's client departed a few minutes later, and Mr. Granger was asked to step into the lawyer's office. He found his business very easy to arrange in the manner he wished. Mr. Vollair had received more than one offer for

Friarsgate farm, and there was an applicant who would be glad to get the place as soon as John Granger could relinquish it, without waiting for the expiration of his lease. This incoming tenant would no doubt be willing to take his furniture and live and dead stock at a valuation, Mr. Vollair told John, who left the office in tolerable spirits, pleased to find there were no obstacles to his speedy departure from a home that had once been dear to him.

CHAPTER II.

John Granger's preparations and arrangements, the disposal of his property, and the getting together of his simple outfit, occupied little more than three weeks; and it was still bright midsummer weather when he took his last walk round the pastures of Friarsgate, and for the first time since he had resolved to leave those familiar scenes realized how great a hold they had upon his heart.

"It'll be dreary work in a strange country," he thought, as he leaned upon the gate, looking at the lazy cattle which were no longer his, and wondering whether they would miss him when he was gone; "and what pleasure can I ever take in trying to get rich—I who have no one to work for, no one to take pride in my success? Perhaps it would have been better to stay here, even though I had to hear her wedding-bells and see her leaning on Robert Ashley's arm, and looking up in his face as I used to fancy she would look up to me in all the years to come. O, God, how I wish I was dead! What an easy end that would make of everything!"

He thought of the men and women who had died of a fever last Autumn round about Hillborough—people who had wished to live, for whom life was full of duties and household joys; whose loss left wide gaps among their kindred, not to be filled again upon this earth. If death would come to him, what a glad release! It was not that he suffered from any keen or violent agony; it was the dull blankness of his existence which he felt—an utter emptiness and hopelessness; nothing to live for in the present; nothing to look forward to in the future.

This was the last day. His three great chests of clothes, and other property which he could not bring himself to part with, had gone on to London by that morning's luggage-train. He had arranged to follow himself by the night mail, which left Hillborough Station at 9½, and would be in London at 6 o'clock next morning. At the last, he had been seized with a fancy for prolonging his time to the uttermost, and it was for this reason that he had chosen the latest train by which he could leave Hillborough. He had a good many people to take leave of, and it was rather trying work. He had always been liked and respected, and on this last day it surprised him to find how fond the people were of him, and how general was the regret caused by his departure. Little children hung about his knees, matronly eyes were wiped by convenient aprons, pretty girls offered blushing to kiss him at parting; stalwart young fellows, his companions of old,

declared they would never have a friend they could trust and honor as they had trusted and honored him. It touched the poor fellow to the heart to find himself so much beloved. And he was going to sacrifice all this, because he could not endure to live in the old home now his dream was broken.

He had put off his visit to Matthew Lorton's house to the very last. His latest moments at Hillborough should be given to Susan. He would drain to the last drop the cup of that sweet, sad parting. His last memory of English soil should be her bright, tender face looking at him compassionately, as she had looked the day she broke his heart.

It was half-past seven when he went in at the little garden gate. A warm summer evening, the rustic garden steeped in the low western sunshine; the birds singing loud in hawthorne and sycamore; a peaceful vesper calm upon all things. John Granger had been expected. He could see that at a glance. The best tea-things were set out in the best parlor, and Mr. Lorton and his daughter were waiting tea for him. There was a great bunch of roses on the table, and Susan was dressed in a light blue muslin, with a rose in her bosom. He thought how often in the dreary time to come, she would arise before him like a picture, with the sunshine flickering about her bright hair and the red rose at her breast.

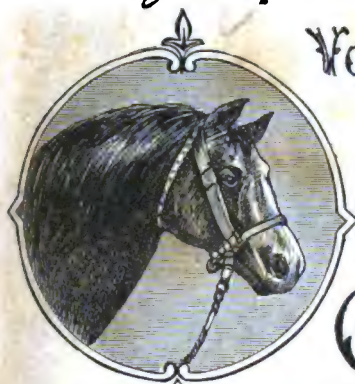
She was very sweet to him that evening, tender and gentle and clinging, as she might have been with a fondly-loved brother who was leaving her forever. The farmer asked him about his plans, and gave his approval of them heartily. It was well for a sturdy fellow with a bit of money to push his way in a new country, where he might make cent for cent upon his capital, instead of dawdling on in England, where it was quite as much as a man could do to make both ends meet at the close of a year's hard work.

"My little Susy is going to be married to young Bob Ashley," Mr. Lorton said by and by. "He asked her last Tuesday was a week, but they've been courting in a kind of way this last twelvemonth. I could n't well say no, for Bob's father and I have been friends for many a year, and the young man's a decent chap enough. He's going to rent that little dairy farm of Sir Marmaduke Halliday's, on the other side of Hillborough road. Old Ashley has promised to stock it for him, and he hopes to do well. It isn't much of a match for my girl, you know, John; but the young people are set upon it, so it's no use setting my face against it."

[TO BE CONTINUED.]

At Shelby, Ky., one man bought 210 hogs and corn to feed the same, for \$3563, fed and sold them, averaging 223 pounds, for the handsome sum of \$6640, and refused the offer of \$954 for 111 shoats that he raised from them. Another man and his son fed and sold 793 hogs, averaging 305 pounds, upon which they made an outlay of about \$9000, for the round sum of \$21,000.

VOL. IV. No. 8.



THE
SOUTHERN

FARM AND HOME



JUNE, 1873.

W. M. BROWNE, EDITOR.



PUBLISHED BY
BOYLE & CHAPMAN,
MEMPHIS,
TENN.



NEW CROP SEED! SEED!

FOR FALL SOWING

JUST RECEIVED BY

R. G. CRAIG & CO.,
MEMPHIS, TENN.

Red Clover, - - - \$8.00 per bush.
Sow 10 lbs. to the acre.

Orchard Grass, - \$3.00 per bush.
Sow one bushel to the acre.

Herds Grass, - - \$1.75 per bush.
Sow one bushel to the acre.

Blue Grass, - - - \$2.00 per bush.
Sow one bushel to the acre.

Timothy Seed, - \$5.00 per bush.
Sow one bushel to four acres.

**White Clover, }
Alsike Clover, } - - 75 cts. per lb.
Lucern Clover, }**
Sow six lbs. to the acre.

Seed Rye, - - - \$1.15 per bush.

Seed Barley, - - - \$1.25 per bush.

Seed Wheat, - - \$2.25 per bush.

*In all cases Sacks will be charged extra to
the above prices.*

BRINLY PLOWS!

ALWAYS ON HAND.


No. 1, 7-in. cut (steel point and land side), \$ 8 50
No. 2, 8-in. cut (steel point and land side), 10 50
No. 3, 9-in. cut (steel point and land side), 11 00
No. 0, subsoil..... 6 50

EXTRA POINTS, &c.

No. 1, A, B or C steel point.....\$1 50
No. 1, A, B or C cast point..... 35
No. 2, B steel point..... 2 00
No. 2, B cast point..... 50
No. 3, B steel point..... 2 50
No. 3, B cast point..... 50

STANDARDS.

No. 1, cast standard.....\$2 00
No. 2, cast standard..... 2 50
No. 3, cast standard..... 2 50
No. 4, steel cotton sweep..... 3 50
No. 6, cotton scraper..... 2 50
No. 8, steel shovel mold..... 2 50
No. 10, cast shovel upright..... 1 25
No. 12, wrought bull-tongue..... 1 00
No. 14, steel half shovel..... 2 00
No. 15, buzzard wing, Dickson's steel sweep 3 50

 Improvements have been made from time to time upon the "Brinly Universal Plow." These changes are indicated by the letters A, B, C, etc.; therefore, persons ordering extra standards and points must be careful to give the letter as well as the number, also the date of the patent on the casting to be replaced, and state whether your plow is straight or crooked beam, and give the number of the kind of upright.

R. G. CRAIG & CO., Agents,

Memphis, Tenn.

Nov. '72, -6m.

THE WONDER WORKER.

MANSFIELD & HIGBEE'S

MAGIC ARNICA LINIMENT,

Prepared from rare Essential Oils, Extract of Camphor, Extract of Arnica,
Chlorodyne and Magnetic Fluid chemically combined.

The great success of this powerful penetrating Fluid warrants the proprietors in pronouncing it the greatest Liniment extant. It is a penetrating Fluid, which passes immediately through all the tissues, muscles, and to the bone itself. Its action upon the Absorbents is not to seal them up, as other Liniments do, but to open them and increase the circulation. It is based upon scientific principles for cure or natural restoration of all organic derangements, whether in man or beast.

Send for a Circular bearing the evidence of its wonderful efficacy, from the following well-known citizens of the South:

COL. PHIL. B. GLENN, of Shelby county, Tenn. Cured him of Spinal disease.
T. E. BRINLY, Plow Manufacturer, Louisville, Ky. Cured him of a serious hurt received from a fall.
A. C. LANE, Horn Lake Depot, Miss. Cured him of Paralysis.
COL. S. J. WADLEY, Iuka, Miss. Cured him of a hurt of eleven years' standing.
COL. D. H. C. MOORE, Dardanelle, Ark. Cured his wife of rheumatism.
M. V. ROGAN, Olive Branch, Miss. Cured of neuralgia. Had suffered three years.
B. BUCK, Hart's Crossing, Miss. Cured of neuralgia and rheumatism.
GEORGE M. SANDIFER, Madison Station, Ala. Cured of rheumatism of twenty years' standing.
DR. ALFRED MOOREMAN, Sacramento, Ky., writes: "Your Liniment gives universal satisfaction."
DR. J. W. TARRY, Dukedom, Tenn., writes: "Your Magic Arnica Liniment gives great satisfaction."
Hundreds of others have published their testimony to its great merits.

THE LADIES' REMEDY.

Dr. Jackson's Female Vigorator:

A REGULATOR,

UNSURPASSED FOR THE CURE OF DISEASES PECULIARLY INCIDENT TO WOMEN.

The enlarged experience of Dr. Jackson, who made the Diseases of Women a specialty, made him eminently successful, and to that experience and success we are indebted for the happy combination known as his

FEMALE VIGORATOR.

This Preparation is intended specially for the Cure of Female Diseases, such as
CHLOROSIS, OR RETENTION, IRREGULARITY, PAINFUL MENSTRUATION,
SUPPRESSED MENSTRUATION, LEUCORRHEA, UTERINE ULCERATION,
And all affections of kindred nature.

We earnestly ask of ladies that they give the Vigorator a trial. Full directions accompany each bottle, and if further instructions are required, the proprietors, in strict confidence, are always ready to assist, and will answer any communications. It is really believed that there exists no woman who will not feel herself stronger and better by using this certainly most reliable medicine; and those who are suffering from Functional Derangement, Debility, Sick Headache, Nervousness, Pains in the Back or Loins, and smaller affections arising from the same cause, would do well to hesitate before placing themselves at the mercy of some quack who can not know the whole history of their trouble. Let them, instead, procure a bottle of DR. JACKSON'S FEMALE VIGORATOR, and give it a faithful trial, and our word for it, they will never, never regret it. Be sure of the name, and be sure to take no substitute. Ask for DR. JACKSON'S FEMALE VIGORATOR, and receive nothing but what you inquire for. See that the Proprietors' name—MANSFIELD & HIGBEE—is upon the bottle, and that it has their own Proprietary United States Stamp upon it.

WHILE THERE IS LIFE THERE IS HOPE!
THE VERY BEST LUNG MEDICINE EXTANT.

HUNGARIAN BALSAM OF LIFE.

This valuable compound is no secret preparation. Its ingredients are well known, and, what is better, have been well and successfully tested. Read the list:

WILD CHERRY, BALSAM TOLU, SANGUINARIA, LIVERWORT, ESSENCE OF TAR,
HOARHOUND, LUNGWORT, SQUILLS, SENEKA, MATICO, LOBELIA,
ENGLISH WOOD NAPHTHA.

The most scrupulous care is observed in selecting the above materials, in order to secure the full medicinal powers of their active principles, and we claim that the HUNGARIAN BALSAM OF LIFE has not only the happiest and most effectual medicaments for its composition, but that it contains the LIFE of each ingredient in perfect combination. Wood Naphtha has attained a wonderful reputation for its powerful renovative powers in CONSUMPTION; but the numerous inferior articles and imitations called by its name have almost crowded out the pure and much more expensive genuine, and, in consequence, the latter is seldom accessible to the majority of the people. It is guaranteed that none but the purest and best English Wood Naphtha is used in the HUNGARIAN BALSAM OF LIFE, and the Proprietors can show, by VOLUMES OF EVIDENCE, it stands positively unrivaled for

THE TREATMENT OF
CONSUMPTION, COUGHS, BRONCHITIS, ASTHMA, DISEASES OF THE THROAT AND BRONCHIAL
TUBES, CROUP, OPPRESSION OF THE CHEST, SPITTING OF BLOOD, INFLUENZA,
WHOOPIING-COUGH, AND ALL DISEASES OF THE PULMONARY ORGANS, AND

AS AN EXPECTORANT IT HAS NO EQUAL.

The above Medicines, now long established and staple throughout the South and West, are manufactured with the most scrupulous care by the Sole Proprietors,

MANSFIELD & HIGBEE,
Memphis, Tenn.

Proprietors, also, of the TEXAS TONIC SYRUP, for Chills and Fever; LA CREOLE HAIR RESTORER, HIGHLAND BITTERS OR SCOTCH TONIC, DR. BRAZIER'S LIVER MEDICINE, &c.

For Sale by Druggists and Dealers in Medicines Everywhere.

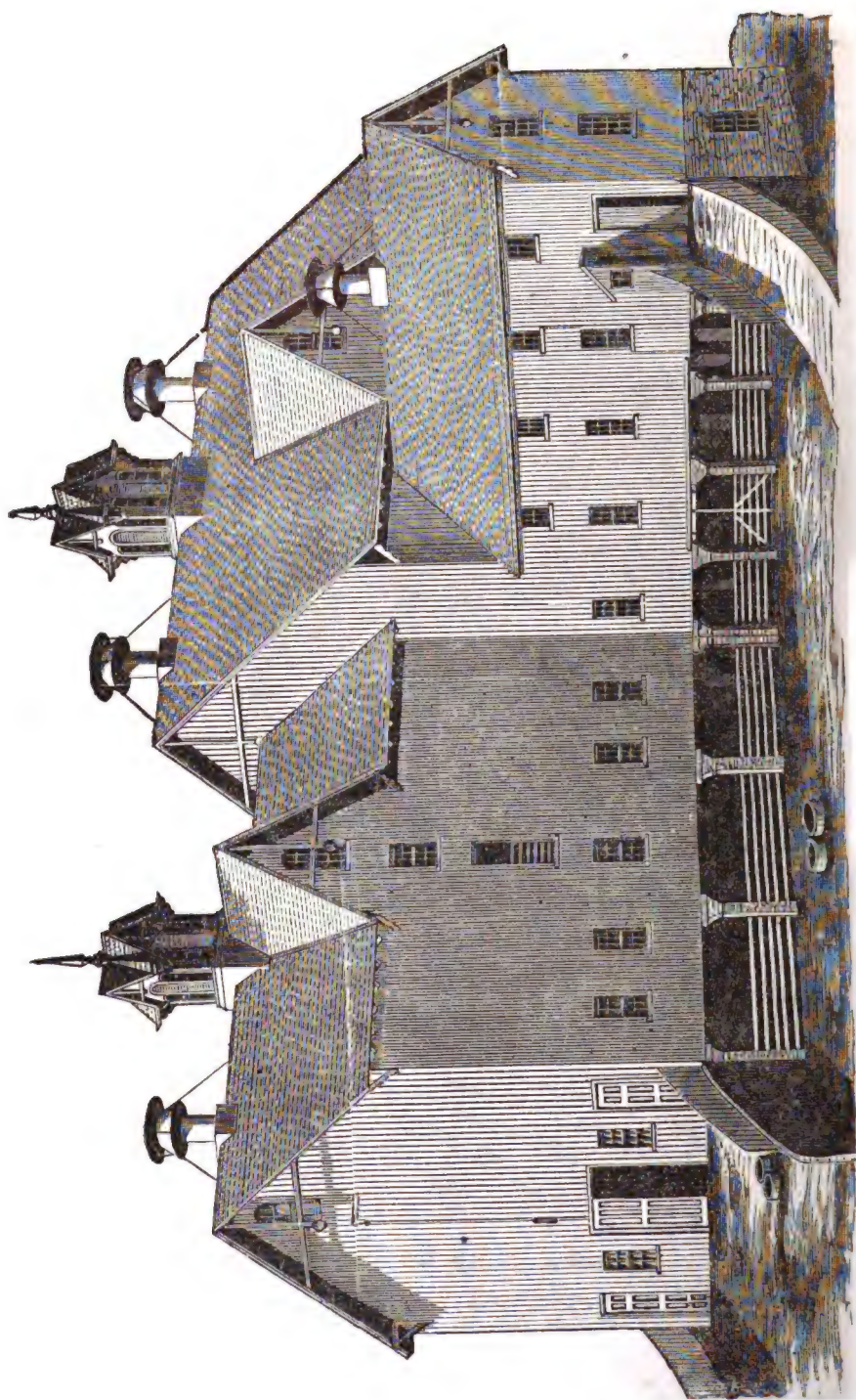
⚡ NONE GENUINE WITHOUT OUR PRIVATE PROPRIETARY STAMP. ⚡

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MODEL BARN.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV.

MEMPHIS, TENN., JUNE, 1873.

No. 8.



Farm Work for the Month.

The most pressing engagements of the crop-making season are now upon us. The last working of the corn, the demands of the cotton, and the cutting and harvesting of the small grain crops, require close and timely attention. The lateness of the season, and the cold and inclement weather of the spring, render it all the more important that this work should be well and promptly done.

CORN.

The last working of the corn should be carefully performed. If the previous culture has been deep and thorough, the plowing should be shallow so as to throw soft earth about the roots and increase the depth of soil about them, and cover up all young grass without injury to the network of roots which lies near the surface. A twenty-two inch sweep with the right wing elevated and the left wing half elevated, running about half an inch deep, is the proper instrument to use. The corn crop should be laid by perfectly clean.

We would recommend at this time to sow ten or twelve quarts of cow-peas broadcast among the corn, and cover them with this last plowing. They shade the land beneficially from the hot suns of July and August, and produce as fine a crop of peas as we have seen raised in any other way.

COTTON.

Cotton is still tender and needs careful and gentle handling. To keep it perfectly clear of

grass and weeds, and the soil about the young plants soft and friable, is the great object of culture at this time. The crop needs all the nutriment the soil affords, and the bed should be in such a mellow condition that the roots may penetrate it in every direction in search of supplies. The plowing should be close and shallow, to be followed immediately by the hoes, which should perform the work which the plows failed to reach. The utmost care should be taken by the hoe-hands not to wound or bruise the young plants. After blooms begin to appear the culture should no longer be deep and close, but the middles should be well plowed. We do not approve of "throwing dirt" to the roots. We think this is frequently overdone to the injury of the crop. It is enough to leave the surface of the bed mellow and clean. A twenty-two inch sweep, almost flat and as sharp as possible, with good sharp hoes, handled by careful laborers, whose aim it is to do the work well rather than to run over a number of acres, are the tools to be used.

WHEAT AND OATS.

We trust that our readers are sufficiently ahead with their other engagements to give proper attention to the cutting and harvesting their small grain crops, and we trust also that every farmer who reads the *FARM AND HOME* has a fine crop of wheat and oats to cut at this time. Except that portion of the small grain crop which is intended for seed, wheat, oats, &c., should be cut before they become what is called "dead ripe." Two days of fine weather are quite enough to cure wheat in the sheaf sufficiently to prepare it for threshing. We advise the use of the reaping machines wherever practicable instead of the "cradle" of old times. Apart from the greater expedition in cutting, the reaper has a great advantage over

the cradle in the neatness with which it does the work and the absence of all waste. Persons whose crops of small grain are not sufficiently extensive to warrant them in going to the expense of buying a reaper, might club together in the purchase, and aid each other during the harvest. The same advice applies to the use of the threshing machines. Those which thresh, clean, expel the straw and deposit the clean grain in sacks, are the best and most economical: When the wheat has been threshed it should be spread out thinly on sheets and thoroughly sunned for several days, after which it should be put away in bins or barrels newly whitewashed with quick-lime. The weevil will never attack wheat handled as above recommended. Oats should be bound in small sheaves and allowed to cure perfectly before they are put up in stacks or stored away in bulk in the barn or loft. If possible they should never be allowed to get wet. They are easily heated and spoiled when stacked in a damp or too green state. They should be put up in small shocks until cured, and when cured hauled directly to the barn. The stack is a poor way to store them. We have rarely seen an oat stack in which the ends of the sheaves were not so placed as to be the best conductors of rain into the center of the stack, and still more rarely have we seen an oat stack in which when opened for use a considerable portion of the sheaves was not unfit for use. The barn is by far the best place for them.

PEAS AND GREEN MANURE.

Plant cow-peas as largely as space and time will permit, and as soon as the small grain crop has been removed, plow in a thick sowing of peas for turning under in the fall.

MILLET AND DRILL CORN.

There is still time to sow millet and drill corn for forage. Where the land has been well prepared and is rich, either naturally or artificially, a good and profitable crop may be raised. It is idle to attempt to raise either on poor or ill-prepared land.

SWEET POTATOES.

While the supply of "slips" continues, plant them out in the evening in every available spot. The crop will pay abundantly for the labor.

TURNIPS.

We would earnestly advise our friends to prepare to plant for a large turnip crop. Plow deeply and closely the land intended for this crop, and keep on plowing and cross-plowing

it from now until the end of July, so as that when the time comes to sow the seed, the soil may be as fine and mellow "as an ash heap" to as great a depth as good plows and subsoilers can make it. Let not the manure be spared. Apply it liberally. Well-rotted cotton-seed plowed under now, and from three hundred to four hundred and fifty pounds per acre of the best ammoniated superphosphate applied just before seed-time, will insure a good yield. Rutabagas should be sown the latter end of July, and the common turnip from August to the end of September. The rutabagas are the best turnip for stock, and are less liable to damage from the fly than all other varieties.

We conclude our notes of "work for the month" by assuring our readers that if they would have well-filled gin-houses, corn-cribs, grain-bins, potato-banks, and barns well stored with forage, they must not lose a moment during the working days of this month of June. Time lost now cannot be regained.

For the Southern Farm and Home.

GUILTY FARMERS.

There are some farmers who are guilty of taking several political papers during the course of a year, and cannot afford to subscribe to a single agricultural journal. Now what does this mean? Does it mean that they do not wish the art of agriculture to be progressive at all? If I am not mistaken I have been told what is equivalent to this. Well, farmers, you who are guilty of this have not in reality the true spirit, and if you continue in such you will surely be known by your poverty. Do not let prejudice carry you so far as to render you totally blind. I am sure that a good agricultural journal is much purer than the corrupt, political stuff you daily read. You can derive useful and profitable information from the one, and you rarely see much to edify or interest in the other. Now ponder this and change your course for the sake of your future prosperity.

April 12, 1873.

EDGEcombe.

The *New England Farmer* is inclined to believe the value of carrots as food for stock is underrated, judging from actual experience in feeding them. Although 85 per cent. of the carrot is water "its influence in the stomach upon other articles of food is most favorable, conducing to the most perfect digestion and assimilation."

Letter from John Plowhandles.

PATRONS OF HUSBANDRY—GRANGES—CO-OPERATION AMONG FARMERS.

MR. EDITOR—For the past two years, I have watched with interest and close attention the growth and development of the agricultural order known as "Patrons of Husbandry." I admit that at first, the movement having originated in that modern Sodom, Washington city, I looked upon it with disfavor and distrust. I thought that it might be a dodge of designing men to form a ring, by which to control and defraud the agriculturists of our country, and use them as tools for some iniquitous political purpose. I did not like the secret feature of the organization, and was strongly disinclined to favor the spread of the order in the Southern States.

I have come, however, to find that my fears were groundless—that the aims and objects of the "Patrons of Husbandry" are all praiseworthy, benevolent and wise, and from having been an opponent of the movement, I am now one of its most earnest advocates.

Having seen your candid and straightforward avowal of your opinions on this subject in your last issue, and judging therefrom that if you are satisfied that this agricultural combination is for the good of the farmers, you will advocate it, I venture to give you and your many readers my humble views in relation to it, in the belief that whether you and they agree with me or not, you will at least give me credit for honesty and sincerity.

In the first place, I can assure you that the order of Patrons of Husbandry is in no sense a political organization. Party politics are entirely excluded from the discussions in the "Granges," or local lodges. You need not, therefore, feel any apprehension that they can ever become political associations or clubs, to be moved and directed by what are known as political leaders. These Granges, which now exist in nearly every county of every State in the Union, are simply co-operative associations of farmers, the members of which combine to promote the best interests of the agricultural population, protect them against extortion and imposition, enable them to procure what they need of the best quality and at the cheapest price, point out the best and most advantageous markets for their produce, advance their social enjoyment and culture, and thus by unity of purpose, harmony of action, and combination of strength, constitute a power in the land

which legislators and politicians must respect, and which rings and monopolies dare not assail.

In the beginning, these Granges were formed for the purpose of emancipating the farmer from the thralldom of the middlemen, and enabling them to purchase what they needed, and sell what they had produced by direct intercourse with the manufacturers and consumers. This you will agree is a "consummation devoutly to be wished." Next, these associations have combined for protection against the cruel and crushing exactions of the railroads in their discriminating schedules of freights, by which the profits of the farmer's toil is swallowed up. This too is a benevolent and a wise purpose. Then these associations, by the intercourse of their members, and their members' families—for the farmers' wives and daughters are admitted to membership—and the constant intercommunication of the Granges, one with another, tend directly to the mental improvement and general enlightenment of the members, and bring about intimate social relations, promotive of increased happiness and comfort. The secrecy of the organization and the formalities of initiation and advancement in the order, serve to bind the members together in closer brotherhood, and separate their interests and purposes from those of the outside world.

It is amazing what progress the order has made. The Patrons of Husbandry cannot now number much less than a million of the sons and daughters of the land, and day by day this number is increasing by the formation of new Granges.

The movement is very popular at the South. The best, wisest and most earnest of our farming population have joined in it, and the day cannot be far distant when a power so formidable by its numbers, by its influence and its extensive ramifications, will be felt throughout the land, impressing itself upon the legislation of the various States, and remedying the abuses and corruption which now disgrace the country and waste its resources. Necessarily before long this organization will exert itself in favor of free trade, inasmuch as every agriculturist, whether he resides in the Northwest or the South, must realize the fact that all protective duties are burdens upon agriculture and clogs upon its progress.

Thus far, I see nothing but unalloyed good in the order. It is my purpose to devote all my energies, feeble though they be, to promote its spread and firm establishment, and should I be fortunate enough to secure for it the influ-

ance and support of the FARM AND HOME, I shall feel that I have done an important service to a cause which I firmly believe to be the promotion of the happiness and prosperity of the numerous and worthy class for which you and I, Mr. Editor, have labored, and with which we have been identified for so many years. You know that I am not easily captivated by novelties—that my approval is always the result of careful examination and an honest judgment. I have examined the working of this order with patient deliberation, and though, as I have stated, strongly prepossessed against it at first, I am now among its most active advocates, and I hope to see a Grange established in every county of every State of our beloved South.

Yours respectfully,

JOHN PLOWHANDLES.

For the Southern Farm and Home.

Foreign Immigration.

MY DEAR GENERAL—Please find inclosed two dollars, the amount of my subscription to the SOUTHERN FARM AND HOME for 1873. Pardon this delay in sending forward the money, which I trust may not occur again in future. I have become wedded to the journal, and cannot well do without it.

I have intended from time to time to prepare and send you a communication on the subject of immigration to our Southern States. It has long appeared to me that our Southern people were standing, in view of surrounding circumstances, very much in their own light in this matter. There is but one plain road open to a successful and peaceable solution of the vexed political questions which have, and are still paralyzing the social and material prosperity of the States of the Union having within their borders a large aggregate population of the colored element. That this element is and will continue to be utilized in the interest of a party in antagonism to the white population to the manor born, must be conceded, and to counteract its influences for woe to the country, a liberal and uniform system of foreign immigration should be inaugurated and carried out by the co-operation of every man, woman and child who feels the necessity of a return of peace and prosperity throughout the Southern States. To this end, inducements to foreign emigrants, now landing by thousands upon our eastern shores, should be held out to them in the form of landed homesteads to the

cultivators of the soil, on condition of occupancy for a term of years; and to the mechanic, peculiar privileges within the towns, cities, and along the water-courses within these several States.

There are millions of acres of uncultivated lands in the South, and which never will or can be cultivated under the present condition of affairs. Now let these lands be cut up into small tracts, and these, by alternate tracts, *absolutely given*, in consideration of a term of residence, to those who would enter upon and occupy these lands, with the privilege of use and purchase of the contiguous tracts at a fair market value at the date of purchase.

To mechanics and other laborers (domestics, &c.), peculiar privileges could be offered within the cities and towns; and to manufacturers and capitalists, who would lay hold of and utilize the now waste water-powers of these States, let those owning them make a suitable sacrifice in order to secure their improvement, as well as the influx of a white population, which, in time, will neutralize the colored element; and as these two elements can never affiliate politically any more than they can socially, it will ultimately place the government of these States once more in the hands of the white population, where intelligence and virtue, and not ignorance and knavery, will control the material, social and political future of the South.

Until something of this kind is done, in my humble opinion, the physical as well as the material prosperity of the Southern States will linger in the lap of decay, and social and political discord cast their blight and mildew all over the land.

If time and health will permit, I will, ere long, prepare for the FARM AND HOME a well-digested plan for peopling the South with a class whose future well-being shall be inseparable from the native white population, and through whom the original greatness and grandeur of these States may be attained. Until then, I remain, with sincere regard,

Your obedient servant,

C. P. CULVER.

WASHINGTON, D. C., May 9, 1873.

Lands are made to increase yearly in fertility, mainly in three ways—by buying commercial fertilizers, by plowing under clover, by buying rich food for animals and saving all their droppings. The farmer understands his business who knows which mode is best for him. The most successful farmers practice all three.

[By request of several valued subscribers we commence the republication of a series of articles on "Plantation Accounts" written for the FARM AND HOME two years ago, by Hon. Samuel Barnett, Secretary of the State Agricultural Society of Georgia, and one of the ablest agricultural writers in the South.]

For the Southern Farm and Home.

Plantation Accounts.

BY SAMUEL BARNETT, WASHINGTON, GA.

MR. EDITOR—It is the interest of every man to understand his business. The farmer forms no exception to this rule, and it is a part of his business to know whether he is making any profit, and how much and what portion of his work pays, and what portion, if any, loses, or is at best unprofitable. To know these things he must keep accounts.

Annexed I send you a form of a plantation account, on which I shall offer some comments which will, perhaps, better explain my meaning to plain and practical men than a more formal method.

FORM OF PLANTATION ACCOUNT.

Receipts.

Crop.	Ac's.	Product.	Value.
Wheat.....	30	225 bushels.....	\$360
Oats.....	60	400 bushels.....	320
Corn.....	100	1100 bushels.....	1210
Fodder.....	.....	18000 lbs.....	200
Shucks.....	.....	10 loads.....	60
Peas.....	.....	80 bushels.....	100
Cane.....	10	400 gallons.....	120
Potatoes.....	5	300 bushels.....	100
Cotton.....	100	60 bales 450 lbs..	3600
Pork.....	.....	2200 lbs.....	250
Sundries.....	.....	.....	300

\$6620

Expense.

Items.	Cost.
Hands 15, wages.....	\$1650
Food.....	750
Extra hands.....	110
Food.....	50
Over payments.....	100
Mules 8, food.....	880
Wear and Tear.....	200
Overseer's wages.....	400
Supplies.....	200
Tools and Repairs.....	150
Seed.....	100
Fertilizers.....	600
Cotton expenses.....	300
Taxes.....	120
Interest, \$10,000, at 7 per cent.....	700

6310

Profit..... 310

\$6620

GENERAL REMARKS.

The receipts are given in the usual order of time in which crops come in. The number of acres in each sort of crop is first stated. Many farmers cannot tell this, but their information is certainly very imperfect till they know how much they cultivate. To ascertain the product with reasonable accuracy, is yet more important, and this should be done by measurement, and not by guess. The product and the number of acres being known, the yield per acre and its value are easily seen. The comparison then becomes facile between the relative profits of different crops. Certain incidents, as pasturage, etc., are to be taken into consideration, but the general result is made obvious to the eye and can be included in the calculations for another season.

Be it observed that the mind has great need of mechanical aid in comparing results in long and complex proceedings. The crop extends over a large surface, and a long period. It is gathered piecemeal, and one crop after another. When cutting wheat the farmer is occupied with cultivating other crops, and hurried and perplexed to accomplish almost incompatible duties.

The work is all intermixed, and at the close of the year there are the raw materials for a great deal of calculation which he seldom takes time to make, all lying loose, like census returns not added up or tabulated, and therefore as worthless as if never made.

Now, this putting the details into a tabular form is the very thing needed to make everything intelligible, and furnish the basis for intelligent action.

While it is not very difficult, it is after all rather more so than one supposes till he tries—to fill the blanks. Suppose the several names written down in order, and the task before him. First stands wheat. "How many acres did I have in wheat?" Perhaps 10, 12, or 20. How many bushels did I make? Why, I cut a good deal and fed to the stock, and the number of bushels I never entered. Still, it being usual to measure up the wheat, this item is remembered, and the quantity fed to the stock conjectured.

Now as to the value. This should be the net value. If 80 bushels were consumed at home, worth \$1 50 per bushel, that would be \$120. The remaining 145 bushels would be worth at \$1 50, say \$217 50. But deduct the cost of sacks, and the freight (if any) before entering the amount, and it might leave \$200

worth of it sold. The aggregate value would then be \$320.

In regard to the oat crop, there is much of this fed away without threshing. It may sometimes be best to estimate it in hundreds, not in bushels. If one comes directly to the point, it is not usually difficult, however, to effect the estimate. The rub is that few will come to the point with one item, much less with the several items necessary. Farmers are subject to constant interruptions, and they start to calculate, are called off—start again, are again interrupted, and never finish. They have, therefore, a vast mass of undigested particulars, with very little idea of what the result of digesting them would be.

SOME PARTICULARS IT WOULD BE WELL TO KNOW.

1. One may select for himself what he will choose to omit. But to be fully and perfectly informed, he should have a good plat of his land, showing not the outlines only, but the streams, and the cross-fencing.

It is of service to show on the plat the cultivated parts, which are often very irregular, with the acres in each marked down. Such a plat would surprise most persons, in Middle Georgia, especially, by the small proportion of cultivated land. Generally, only from one-sixth to one-fourth of the farm is in cultivation.

If the plat shows also the woodland, the bottom land, the old field pine land, and such like particulars, it will be of service in seeing where to clear to advantage; how to run fences without waste, suitable pasture land, and numerous other practical questions.

2. The foregoing information, in the form of a plat, will help him in the next inquiry, viz.: how many acres he has in each crop. Indeed, it will help him in every way. I have been paid ten times the expense and trouble of all the platting, in seeing how to run a particular fence to advantage.

When he measures, weighs or counts (as the case may be) the crop gathered, he has achieved another fact of value to him.

3. The item of *interest* on his investment should be properly understood.

If a farm of 1000 acres cost \$6 per acre, and only 250 acres are cultivated, then each cultivated acre averages \$24 of cost, and the legal interest on each acre averages about \$2, while the money, if invested, would probably yield more. On such a farm, probably the stock and provisions (fertilizers included) would be worth

about \$4000, and this would increase the average investment per cultivated acre, say \$16 more, making \$40 in all, and the legal interest nearly \$3 per annum.

4. The value of his own time ought to be computed, if the place is managed by himself and not by an agent. Sometimes his own time might be better occupied, if he has no turn for farming. If a man who could make \$1500 by his own work, can employ an overseer as good a manager as himself at \$600, (provisions included,) it requires but little thought to see his advantage in managing by an agent, and not in person.

Many such considerations will suggest themselves to a man studying a perfect table of his own farming operations.

5. The wear and tear of stock and tools deserve to be carefully observed. This varies to a large extent with the care observed in keeping them, but probably is from 10 to 15 per cent. annually of the value of the working stock. Various incidental losses need to be included in this item of wear and tear, and any one who has kept plantation accounts for a few years will see that they are not inconsiderable.

6. In keeping accounts with freedmen it is well to enter at the head under each name the wages to be paid, or the probable share of the crop, and then to set down an estimate of certain probable items, and show the available balance.

For example—

Wages or share of crop.....	\$100
Food for wife and 2 children, not working.....	60
Less cotton picking.....	25—\$35
Doctor's bills.....	10
Lost time.....	5
	<hr/>
	\$50

Probable balance.....\$50

This sort of estimate will often save one from making over advances unawares.

7. Some of the farm books published present good systems of account-keeping, opening with an inventory. An intelligent man on his own place will do well to keep such a book, but it is not often that an agent can use one to advantage.

8. The value of fertilizers per cultivated acre is easily known, if the number of acres is known; as the bill for fertilizers is already made out in distinct form.

It will require another paper to develop the value of such a table fully. It will prove full of instruction to every farmer who perfects it.

He will find much in it that will surprise him, and much that will improve him. In looking over it, he will deliberate on how to make receipts greater and expenses less item by item. He will learn where the shoe pinches.

If he will study it well and thoroughly, the result will be manifest improvement in net profits. I am not wedded to any particular system, and do not suggest the form accompanying this as suiting everybody. But of the necessity of some reasonably accurate account of one's yearly transactions, tabulated in some form, I am thoroughly satisfied both on principle and by observation. The form given I think a good one—after having used it for some years.

Some additional views I must reserve for another number of your monthly.

Green Manuring.

That green manures will improve our land and increase our crops is an established fact which few will attempt to controvert. Experience and observation have proved it, but why green manuring benefits soils and crops is not so generally known. There are very few even of those who habitually sow, raise and plow under some vegetable crop while it is yet green with a view to enrich the land and improve future crops, who know how the process increases fertility, and what are the nature and properties of those fertilizing elements. Agricultural chemistry has fully explained the mystery, and shown how and why certain plants or grasses, plowed into the soil in a green state are beneficial as a manure. It has shown that these fertilizing elements are 1, silica; 2, alumina; 3, lime; 4, magnesia; 5, oxide of iron; 6, oxide of magnesia; 7, potash; 8, soda; 9, oxygen; 10, hydrogen; 11, nitrogen; 12, carbonic acid; 13, phosphoric acid; 14, sulphuric acid; 15, chlorine. When we know how much of these fertilizing elements, and in what proportions, a particular green crop contains, and have ascertained what elements we desire to restore to the soil for the benefit of a future crop, and in what the soil is deficient, the process of supply is as easy as it is for a tailor to purchase the exact quality and quantity of cloth needed, and then make a coat.

The best crops of green manuring in our climate are the common cow-pea, red clover and rye or oats. All of these contain the fertilizing elements enumerated above, but in different proportions.

Take for instance red clover, the best of all green manures. The great English chemist, Professor Way, of the Royal Agricultural College at Cirencester, made a perfect analysis of dry red clover and found every 100 parts to contain as follows:

Silica.....	0.50
Lime.....	22.62
Magnesia.....	4.08
Oxide of Iron.....	0.26
Potash.....	36.45
Soda.....	00.00
Chloride of Potassium.....	2.39
Chloride of Sodium.....	1.53
Carbonic Acid.....	23.47
Phosphoric Acid.....	6.71
Sulphuric Acid.....	1.35
	99.45

We can all see from the above why clover plowed under in a green state is such a valuable manure. The other plants which we have enumerated possess the above elements also, in varying proportions, and hence also their value.

We will mention here some of the chief advantages of green manuring:

First. It gives back all the mineral and alkaline elements which its growth had drawn from the soil by absorption through its roots.

Second. It gives back to the soil those fertilizing gases which its growth had drawn from the atmosphere, thus by one process restoring to the soil more fertilizing matter than the crop plowed under had taken from it, and if the process be repeated frequently, increasing the fertility of the soil to an almost indefinite extent.

Third. It decays and ferments rapidly and produces an immediately beneficial effect on the succeeding crop.

Fourth. It loosens and mellows the soil, making it porous and accessible to heat, air and light.

Fifth. It elevates the temperature of the soil by the fermentation of a large amount of vegetable matter.

Sixth. It enriches the soil further by shading the ground by its thick and dense growth, preventing the evaporation of the moisture of the soil, and holding the fertilizing gases of the atmosphere which decompose the vegetable matter in and upon the soil.

Seventh. It is the cheapest possible mode of manuring, and it is practicable upon the poorest land, bringing by repetition the most unproductive soils to the highest degree of fertility.

In all agricultural countries where the science of agriculture has reached the highest per-

fection, green manuring is practiced and held in the highest esteem, and the most distinguished writers—Chaptal, Von Thaer, Johnson, Way, Davy, Judge Buel, and a number of others, concur in the opinion that green manuring, as Von Thaer expresses it, "is the very best amelioration that can be bestowed upon a soil, and is capable of bestowing on it the utmost degree of fertility of which it is susceptible, preferable even when there is a sufficiency of animal manure."

The green crop should be plowed under when it is beginning to blossom, because it contains then the greatest amount of soluble matter, and has exhausted the least the nutritive elements of the soil. It should be thoroughly turned under, so that all the stems and leaves may decay, but not deeper than four or five inches, so that the heat and air may act upon it readily and accelerate the decomposition of the whole mass.

Drainage.

It is a very prevalent error that drainage is only beneficial to low or swamp lands; and that for these surface drainage is all that is required.

There are many soils which are indisputably upland which need under-drainage as much as any swamp. There are many sandy soils which are porous to the depth of a foot or more which have a subsoil of impervious clay, through which water cannot pass, and which are thus always damp and cold and consequently unproductive, although they appear to be mellow and fertile.

Stiff clay lands through which water can penetrate but slowly, and which in wet seasons become saturated with excessive moisture, are unproductive because they are too wet for crops, cannot be prepared in time, and cannot be cultivated when they need it, and in dry weather they bake and harden to such an extent as to become impervious to the roots of plants, thus suffering from excessive moisture and from excessive drought, there being no season which exactly suits them.

Barral, the eminent French agricultural writer, and the author of a standard work on drainage, gives the following "external signs of the want of drainage:"

"Whenever after a rain water stays in the furrows; wherever stiff and plastic earth adheres to the shoes; wherever the foot of either man or horse makes cavities that retain water, like so many little cisterns; wherever cattle are unable to penetrate without sinking into a kind

of mud; wherever the sun forms on the earth a hard crust, slightly cracked, and compressing the roots of the plants as into a vice; wherever three or four days after rain, slight depressions in the ground show more moisture than other parts; wherever a stick forced into the ground one foot and a half deep, forms a hole like a little well, having water standing at its bottom—there one may affirm that drainage will produce good effects.

When water stands on the surface, after rain, or when it oozes from the inside, there is no doubt that drainage will be the best improvement that can be made.

In all the above cases vegetation cannot easily take place; crops are scanty, and often amount to nothing; . . . draining only can effect the cure and restore wholesomeness to the ground and life to the crops."

The advantages of drainage are not confined to the carrying off the surface moisture. Among them the following may be considered as most important.

Drainage, by removing the excessive moisture, enables the air and water to permeate the soil, facilitates the healthy decomposition of the inorganic or organic constituents, and promotes the assimilation by plants of the nutritive substances which constitute their food.

It facilitates the "absorption of manure by the soil, and thus diminishes its loss by surface evaporation and by being washed away by heavy rains."—[Chadwick.]

It loosens the texture of the soil, enables the roots of plants to penetrate the subsoil, gradually fertilizes the latter, and carries down soluble substances to the roots of plants.

It prevents the lowering of the temperature, and chilling of vegetation by evaporation, warms the under soil, equalizes the temperature of the ground during the season of growth, and renders it fit to be worked at a much earlier period than it would be if undrained.

There can be no doubt, too, that the poisonous exhalations from our swamps and wet lands, are the causes of the fevers, ague, and other malarial diseases which exist in our country. Were these lands efficiently drained they would not only be more productive, but the public health would be vastly improved.

The expense of thorough drainage need not exceed \$20 or \$25 per acre, which will be rapidly repaid with good interest in the increase of the crops, in the increased certainty of raising good crops every year, and in the improvement of the quality of the crops. In Great Britain since the general adoption of under-drainage, it is stated that the wheat crop has increased more than two-fold, and wherever it has been tested in the Northern States similar results have attended the experiment.

For the Southern Farm and Home.

Sheep Husbandry.

I have long been of the opinion that the cheapest, quickest and best way to renovate our worn-out lands is to convert them into sheep-walks for a few years. I am glad to see that others are of my way of thinking, and that the FARM AND HOME and other agricultural journals of influence are giving to the subject the prominence it deserves. I hold that no land is worth cultivating, that is, will pay expenses and yield any revenue, which is not fertile enough to produce ten bushels of corn, eight bushels of wheat, or between 300 and 400 lbs. of seed cotton per acre. In the present condition of agriculture, and with the present system of labor it is wiser to throw out all such land, if we cannot do anything else with it than try to raise corn and cotton.

But my own experience and observation satisfy me that lands of this sort, or even poorer, may in a few years be restored to a high state of fertility, and produce in the meantime a good interest on the capital invested, by converting them into sheep-walks.

Now I hear my farming friends who have raised cotton and corn time out of mind, say, "What do you mean by sheep-walks? Tell us what you mean and how you propose to do all you say." In anticipation of these natural inquiries, I crave space to make a succinct statement of my plan of sheep husbandry.

Let us suppose a plantation of 1000 acres, well fenced, and supplied with every thing needed except the sheep. I would divide it into three parts, two of which should be set apart for grazing, and the third including woods, house lots, etc., should have from 100 to 150 of arable land for cultivation and renovation. In February and the early part of March, having previously repaired and built all the requisite fences, I would prepare well from 40 to 50 acres, half of which I would sow in oats in the end of February, and plant the rest in corn in March. Having done this, I would then sow eight or ten acres more in oats on which I would fold my sheep at night during the summer and fall, in pens inclosing about half an acre.

The sheep should be bought in April or May, 500 will do to begin with, increasing until the number is 1000.

The folding the sheep is the source of improvement and profit and should therefore be looked after with the utmost care. They should

never be put up in the pens until after sundown and turned out before sunrise, and if cattle are penned with them, will not suffer from disease, and they will be protected from dogs.

The first half acre folded will be sufficiently manured in ten days, and then the pen should be removed, and the manured ground thoroughly plowed, and sowed in oats and rutabaga turnips; and the same process should be followed with each successive pen until the beginning of August, care being taken to plow under all that part of the land set apart for folding on which the oats have ripened, before the folds have reached them.

In the beginning of August the sheep ought to be divided into two flocks, one consisting of the breeding ewes and stock wethers, and the other of the lambs, and such of the old ewes and wethers as may be intended to prepare for market. The folds may now be brought back to the ground first penned and sown in oats and turnips, now covered with a fine growth of both for the second folding. In this second folding there should be two pens for the two flocks, the lambs and fattening sheep being allowed to occupy each pen three or four days before the stock sheep, and allowing the latter to remain for four or five days before removal.

The land folded before the middle of September, may be plowed and sown in turnips for use of the sheep in winter and spring, and the subsequent pens can be sown in rye and wheat, or any other quick growing crop for spring grazing.

When winter comes, the fat sheep should be disposed of as soon as possible, the breeding ewes put in one field to themselves, and the rest of the flock in the other. They should be brought up at night and put in separate lots, provided with good sheds for shelter, and fed night and morning on hay or fodder and turnips. When the ewes begin to drop their lambs, in March, they should be separated from the rest of the flock, fed twice a day on chopped sheaf oats and allowed to run on land prepared for them the previous fall.

The work of each succeeding year, differs only from that of the first, in that instead of breaking new ground for oats, they shall be sown in the twenty or twenty-five acres of corn land and the ten acres of manured land of the previous year, and these ten acres of manured land should at the same time be seeded heavily in clover and grass. Thus ten acres of clover and grass land would be added each year to the resources of the farm. When the 100 or 150

acres first set aside for cultivation, have been by this process converted into clover and grass pastures, fifty acres may be taken in from each of the pasture fields first set aside, and the same system pursued until they are redeemed. Thus in a few years the whole farm will be raised to a very high state of fertility, and the increase and sales of the sheep will yield a good revenue, with very small expenses for labor. An experienced shepherd, and a couple of smart boys are all the labor permanently required. In shearing time and harvest, extra labor would be necessary for a few days.

I have no doubt that by the adoption of a system, such as I have indicated above, or one substantially like it, our poor red hills may be reclaimed, the comfort and prosperity of the people promoted, and the value of the real property of the State immensely increased.

MERINO.

For the Southern Farm and Home.

Saving Clover Seed.

One of the most serious drawbacks to clover raising at the South is the difficulty in getting reliable seed. A large portion of the seed sold as clover, and for which an exorbitant price is paid, is adulterated with all sorts of cheap and worthless imitations, and to such an extent was this fraudulent practice carried in England, that a special act of Parliament was passed inflicting heavy penalties on conviction of the crime of adulterating seeds.

If those who raise clover would take the necessary pains to save the seed, they would find a ready market, high prices and large profits, and do a great benefit to their neighbors by selling them sound, true seed. Now, after thorough preparation of the ground, a heavy outlay of money for seed and freight, careful sowing, rolling, etc., the planter finds in the spring that he has raised a fine crop of fennel or some other weed, and scarcely a sprig of clover. He has lost his labor and his money, and a full year of time.

I want our farmers who have had the wisdom to grow clover, to have the benevolence and the prudence to save the seed. The process is somewhat troublesome, requiring much care and attention, but it pays. The main objects to be attained are, first, to cut the seed when the largest quantity is ripe; and, second, to gather and handle it so that the seed will not be shattered on the ground, and empty straw gathered into the barn. The reason of the

failures to save clover seed is want of attention to these matters.

First, as to the time of cutting: In every clover field, from the time the first heads ripen until the close of the season, the seed are daily reaching maturity. They cannot all be saved at the same time, because they do not all ripen at once. Therefore it is necessary to ascertain, by close and diligent observation, the exact time when the greatest amount of seed is ripe, and when this is found cutting should commence. If the clover be cut before this the seed will not be good, because a large proportion of them will be immature; and if it be cut after this period has gone by, a still heavier loss will be sustained in the quantity of seed which will be shaken out of the heads in cutting and handling, because it will be too ripe. When the greater number of the heads assume a dark color, almost black, then is the time to cut. The heads which have a brown appearance are nearly ripe, and will become so after cutting.

Second, as to cutting: If the clover has not lodged and become tangled, the common grain cradle is the best instrument with which to cut, when the farmer does not own and cannot procure a horse mower. It should be thrown into double swaths, that is, the clover of two lands should make one swath. After the clover is cut, great care should be taken in curing. Should the weather be fine, it may be left in the swaths for four or five days—much longer than is necessary for curing hay—and then, while it is moist with dew in the morning or evening, so that the heads will not shatter, it should be raked into bunches which can be easily raised with an ordinary hay fork, placed in the wagon and hauled to the barn, where it can be threshed and cleaned. Should there be rain after cutting, the clover must be constantly turned, and only hauled away when thoroughly dry and secure against the possibility of heating.

The cleaning is done by a threshing machine and fan, or where a threshing machine cannot be had, it can be beaten out by flails and then cleaned with sieves, first, by a sieve sufficiently coarse to allow the seed to pass through, but retaining all trash and larger seeds, and afterward by a fine sieve which will retain the seed and permit all smaller substances to pass through. By this means the seed can be thoroughly cleaned and prepared for market. Where the seed is to be sown by the producer this cleaning may be dispensed with altogether,

and it can be sown in the chaff, sowing from five to six bushels of seed in the chaff per acre instead of sixteen or twenty pounds of cleaned seed. It is the opinion of all experienced producers of clover that the seed sown in the chaff does better and brings a surer stand than where the clean seed is sown. On well prepared land an acre of good clover will produce from four to five bushels of clean seed.

Tedious and difficult as is the process it is time well spent, because we are sure to obtain good seed, and sure of obtaining a good stand, instead of the cruel disappointments and loss of labor, money and time, which are too often suffered where seed are purchased and imported from a distance.

I attach so much importance to clover as the best fertilizer and most economical renovator of our exhausted lands, and as a first-rate food for all sorts of stock, I am anxious to protect our farmers against failure, and to stimulate them to engage more largely and generally in clover culture. Experience has fully proved that our soil and climate are not unfavorable to the growth of clover. The doubts which were entertained a few years ago have been entirely removed, and all that is necessary now is to take the trouble to prepare the ground and sow the seed.

TREFOIL.

Who Is a Good Farmer?

Wide differences of opinion exist upon the question which heads this article. In the estimation of a majority of men, however, he is considered the best farmer who farms the most land, raises the biggest crops, works the greatest number of hands, runs the most plows, etc. In our cotton raising country he is beyond all doubt the best farmer in popular esteem who raises the greatest number of bales, and the largest number to the hand. Mr. A, who with a self-satisfied look tells you, "I made 1000 bags last year with 100 hands, ten bags to the hand," is set down at once as a "fine farmer;" Mr. B, who made 1100 bags with 99 hands, throws A into the shade, and is universally spoken of as a "splendid farmer;" but when Messrs. C & D come along, who "run eight big places," and made 3000 bags, "eleven bags to the full hand," A and B sink into comparative insignificance, and the praises of C & D—"the most successful planters in the South"—"the biggest planters out"—are on every tongue wherever their fame has reached.

Nobody asks whether the "fine farmer," the "splendid farmer," or the "biggest planters

out," have improved their lands by draining, ditching, subsoiling and manuring; whether they have ascertained the character and elements of their lands, and cropped and manured them with reference to their capacity and requirements; whether they have raised their own provisions, made their manure, kept accurate accounts of their farming operations, and have a practical knowledge of the science of farming. All that is asked is, how many bags of cotton have they raised? Their plantations may be spotted all over with old fields, worn and torn to barrenness; their fields may be seamed with yawning gullies; their houses, barns and stables may be as tumble-down and untidy as possible, without a flower or a vegetable in the garden, and all the appliances of the farm may be as rude and unsightly as can be imagined. The big cotton crop blots out all other transgressions.

This is all wrong. The good farmer is he who raises big crops and at the same time improves his land; who understands his business, attends to it and does it; whose stock are of the best and in the best condition; whose fences are always in good repair; whose farm buildings are commodious and neat; whose dwelling has the appearance of the home of civilized people; whose manure heap is very large and increasing; whose corn-crib and smoke-house are ever full of corn and meat raised by himself; who is surrounded by all the necessaries and comforts of life; who studies his profession and strives to reach the perfection of farming economy, and knows at the end of the year exactly what he has made, what he has expended, and how he stands with the world. He may not raise more than ten bags of cotton, or even less; he may be only that despicable thing, a "patch farmer," but in reality he is incalculably a better farmer than the "fine," the "splendid," and the "biggest planters out," and the time is rapidly approaching when to follow his improved system, emigrate or starve, will be the only alternative left to those who now despise agricultural improvement, boast of never reading an agricultural book or journal, and fancy that what they do not know is not worth knowing, because they are doing exactly as "daddy done," toting corn in one end and a rock in the other end of the sack as the most economical mode of balancing the load.

Plow deep, rotate your crops, and rest your lands.—*Dickson.*

For the Southern Farm and Home.

Curing Clover Hay.

It is a very general belief that clover hay is very hard to cure. This is a great mistake.

Clover for hay should be cut when about half of the heads have turned brown in color. It should never be scattered out of the swath. The old plan of "spreading it out to cure" not only involves considerable useless labor, but does the hay a positive injury. The less any grass is exposed to the sun in the process of curing the greater will be the value of the hay in the retention of the juices and the succulence of the stalks.

Let the clover lie in the swaths until more than half of the upper part is sufficiently cured, which, if the weather be favorable, will be in eight or nine hours, even if the swath is very heavy. If it is light the time required for curing will be proportionately less. When the upper part is thus cured, let the swath be turned with hay forks bottom up, and let it lie thus for four or five hours, until the under side is cured. Then throw these swaths together into windrows—three swaths to a windrow—and commence hauling in, running the wagon between two windrows and loading from each. These operations should only take place after the dew has disappeared. Clover will keep with much less curing by drying than any other grass. It is a good test to twist a bunch of the clover hay, and if no juice exudes, the hay is perfectly cured, and may be hauled home with safety. In Tennessee, Kentucky and Virginia, it is very common, when the weather is fine, to haul home in the evening clover cut in the morning. It is invariably the case on the following day.

If the hay is exposed too long to the sun, the leaves, blossoms and stalks are dried so that the outside of the stem becomes indurated and the interior moisture cannot escape. The result is that the grass is really not cured, or if it is, the long exposure spoils the leaves and blossoms, dries them to a chip, and nothing is left but the stems. Cured in the swath or in the cock, every part, leaf, blossom and stem, dries equally, the evaporation of moisture goes on gradually and regularly, and all the succulent qualities of the hay are preserved.

In storing away clover hay we think that the farmer would do well to have long, high sheds open on one (the south) side, to spread a layer of hay the whole length of his shed, sprinkling each layer with salt at the rate of 20 to 25 lbs.

to the ton, or strewing a layer of straw nine or ten inches thick between every two layers of clover of the same thickness. It is a much better, safer and tidier mode of putting away clover than putting it in stacks.

Let the clover wilt in the swath. Then turn the swath upside down. Then throw into windrows, haul home and put in sheds, sprinkling with salt. In the best clover countries this is the approved way.

FORAGER.

For the Southern Farm and Home.

Upland Rice.

It is astonishing how few farmers think of raising upland rice, and how general is the belief that no rice is worth anything but that which is raised in the swamps of Georgia and South Carolina. The fact is, however, that for table use, and for stock food, upland rice is not only equal in quality and quantity, but superior to the low land, and that it will grow luxuriantly on almost any kind of soil.

This has been proved beyond a question in Alabama, where for many years upland rice has been raised with great success, yielding from fifty to one hundred bushels of shelled rice, that is, rice with the husk on, to the acre; and wherever the attempt has been made in Georgia, even on thin pine land, slightly manured with stable manure or a little cotton seed, it has produced abundantly. I do not know of any grain that yields more generously, that grows more easily on any species of soil, or that is more independent of seasons. Of course, like most other crops, it does better on a rich than on a poor soil—a fat limestone is the best of all—but it will yield largely on pine lands, and if helped by manure and lime, will run the black limestone land very close. The "big white," "little white," and the "red-bearded," all do well on upland. The cleaning or hulling can be easily performed with an ordinary pestle and mortar, and at very little expense three or four of these pestles and mortars could be so constructed as to run by the gin-power, which would clean a large crop with great expedition.

As forage, nothing is superior for all sorts of stock. It is very nutritive, and for milch cows has been found to produce superior milk and butter. During the war, when our cavalry was stationed in the rice country, and the horses were fed entirely on sheaf rice, I have been told by some of the soldiers who served there, that the horses were in fine condition, ate the rice greedily, and were in as good order as when fed on plenty of good corn and fodder.

In diversifying our industry, and particularly in increasing the number of provision crops, I think it would be very well if our people would turn their attention to upland rice. You can bring the subject to their notice, Mr. Editor, and can give them such information as to the time and modes of planting, cultivation, gathering and preparations for consumption as you may deem important.

HOMESPUN.

A Lecture on the "Progress of Agriculture in the Last Thirty Years."

Delivered by M. GEO. VILLE, Vincennes, for the Season of 1868. Translated from the French for THE PLANTATION, by MISS E. L. HOWARD, Kingston, Georgia.

GENTLEMEN—In concluding the conferences of the year 1868, I intend to give you a view of the Progress of Agriculture in the course of the last thirty years.

In giving myself up to this retrospective study, I am not yielding simply to curiosity, but am guided by the desire to show you how the results, which I have laid before you, spring from an anterior progress, of which they are the enlarged continuation, and, as it were, the crown.

Finally, I would have you appreciate, from a more general point of view than formerly, what we may expect from the use of chemical fertilizers, and let you judge of the changes they have introduced in France, particularly in the processes of culture consecrated by the Past.

To have a clear idea of the agricultural situation of a country, you must know its extent and the manner of division of its productive forces.

Property in France, since 1789, has been subjected to extreme division; it was an unavoidable effect of the law regulating the division of estates. Of the 108,000,000 acres, which comprehend our agricultural territory, 40,500,000 are in large estates; 18,000,000 in medium, and 49,500,000 in small divisions. The large and medium estates are in the hands of 2,000,000 proprietors, while the small divisions are divided between 23,000,000 possessors. These small divisions thus overpower the large and medium estates, both by number of representatives and by extent of surface.

To appreciate fully the interests springing from this situation, on which civil and commercial legislation, political economy, and even the manners of the people, have an influence not to be overlooked, you must always bear in mind that there are twenty-three millions of small proprietors in France possessing only exhausted surfaces.

The greatest improvement of the last fifty years, is the tendency of all the people of Europe to suppress the fallow and substitute the triennial system of alternate rotations, through which the ground is occupied by plants of dif-

ferent natures in such a manner as never to leave it unproductive.

As the triennial system makes a grand epoch in Agricultural history by reason of its certainty and the guarantees of order it gives to society, whatever may be its imperfections, let us recall its laws and economy. The triennial system consists in dividing the soil into two equal parts, one of which is always kept in pasture, the other divided into two or three fields invariably devoted to the production of the cereals, with this reserve, that the land be left fallow, that is to say, unproductive one year out of every two or three years.

The exclusive culture of the cereals alternating with the fallow, and the land thus left idle, generally form the two salient points of the triennial system.

Why is this system a grand system, and why does it deserve to be called an epoch in the history of Agriculture? Because it gives entire security to those people who practice it, in that its powers of production are sufficient for their wants. In fact, when this system is rigidly carried out, the land is not impoverished, the natural fecundity of the soil is not impaired, and the harvests it produces may be continued indefinitely.

But, it must be acknowledged, this system has, also, its inconveniences. First, it is not sufficiently productive; do what you may, if continued for a long term of years there comes a time when the harvests, whether they have been larger or smaller, are stopped for wheat, at twenty bushels the acre of grain, and two thousand two hundred and twenty-two pounds of straw. This is the extreme limit of the progress we may expect.

It was then evident that the time would come when this system would not respond to the wants of the people, produced by increase of population, and must disappear or be changed. This change began fifty years ago, and extended from day to day, under the pressure of a necessity, which the farmers rather submitted to than were conscious of. It has been replaced, or soon will be, by alternate rotations, in which the fallow is entirely excluded. Now, as this is—as I look at it—the greatest agricultural progress of the first half of this century, let us study its character and bearing.

In the triennial system one-third of the land remained unproductive; with alternate rotations, the whole of the soil is always at work; consequently, it is evident to all, the latter method is superior by the increase of extent cultivated.

In the triennial system, the returns from wheat stopped at twenty odd bushels of grain the acre; with the alternate rotations, where the fallow is replaced by the culture of clover and the Irish potato, permitting the keep of a large number of cattle, the returns from wheat reach thirty bushels the acre, and the straw passes from two thousand two hundred and twenty-two pounds to three thousand pounds the acre. The advantage, then, as regards the amount of harvest, rests with the alternate rotations.

But observe, gentlemen, if we apply these alternate rotations with rigor, that is to say, if we use as agents of fertility the manure alone produced by the farm, and force the soil to furnish at once the manure which enriches the land, and the cereal, or other crops for exportation, the return of thirty bushels the acre of grain becomes, in its turn, an unchangeable limit, and forms the term of a progress which cannot be passed.

To their superiority of harvest, the alternate rotations add another advantage—that of lessening and preventing, in a certain measure, food crises.

In fact, in this system, clover and Irish potatoes form the chief stock of food. Is the crop bad? The price of wheat is raised; but that of meat and Irish potatoes follow a corresponding rise, and the producer always finds an advantage in selling his animals and his stock of Irish potatoes, which serve to make up, at least in part, the deficit. If there is a good harvest, the price of grain falls. Immediately there is a gain in the cultures for the feeding and fattening of stock. Consequently, I repeat, with the system of alternate rotations, food crises lose much of their gravity; production being no longer restrained to the cereals, the cultivator has always land at his disposal, whose crops he can change on short notice. To allay the evils of bad crops, we need only make use of the laws of demand and supply, which, in matters of economy, is the best of solutions.

But alternate rotations have, in their turn, a grave defect. A time will come when they no longer respond to the demands of consumption, since we cannot, by their help, pass the return of thirty bushels the acre.

Why this impassable limit? Because the manure at our disposal, and which is the sole agent of fertility employed, does not admit of larger harvest. Indeed, the limit of the harvest is expressed by the quantity of the agents of fertility contained in the straw and the products of the meadow consumed in the stable.

I stop here, to better express this first fact—superiority of alternate rotations—but grave fault, in that these rotations, like the triennial system, drawing all supplies from themselves, open but a limited path of progress to Agriculture. It is here that science intervenes and a new order of things begins.

You know, gentlemen, that until these last thirty years, barn-yard manure has been considered as a product, "*sui generis*," alone capable of maintaining the fertility of the soil, and the only substance to which Agriculture had recourse. This was, however, an erroneous opinion, for the manure is a mixture of different substances, which, associated in the form of chemical products, after certain rules and in certain proportions, manifest the same effects that the manure does itself, and may, in certain cases, be superior to it. We know, by certain experiments, that without the aid of barn-yard manure, we may communicate to the poorest soils the fecundity of the most favored, and regulate almost at will, by the help of these

products, the work of vegetation. The farm of Vincennes is there to attest the truth of these results.

Now, I wish, to-day, to reaffirm these demonstrations, by the testimony of history, and I will take my proofs and the justification of the teaching to which you have associated yourselves from a period when the doctrine of chemical fertilizers had not yet been presented.

If it is true that four substances—phosphate of lime, potash, lime, and an azotic matter—suffice, in the conditions under which agriculture operates, for the production of all plants, it is evident there ought to be a balance between the quantities of these four substances contained in the manure and the harvest. The history of a time when these ideas were unknown may then intervene to confirm and strengthen the justice and truth of the doctrine of chemical fertilizers.

We give the proofs in the little table following, which shows all the elements of the triennial system:

	ACRE.	
	Manure.	Harvest.
Phosphoric Acid.....	17.5	16.8
Azote.....	36.8	38.8
Potash.....	45.6	23.3
Lime.....	71.1	14.6

You see the balance concludes in our favor, for, for two elements of production, phosphoric acid and azote, the equilibrium is maintained; and for the two others, potash and lime, the balance is in favor of the manure and the land.

Let us follow the consequences of this important fact. The doctrine of chemical fertilizers adds, also, that the substances which regulate the formation of the harvest, act only in condition they are all four associated together; it adds that each of them, following the nature of the plant, fills by turns a subordinate or predominant function, and this predominance or subordination depends exclusively on the nature of the plant. The doctrine of chemical fertilizers says further, as a third proposition, that plants must be divided into two large classes, as to the source from whence they draw azote; those which take it by preference from the air, as the legumes; and those, on the contrary, who, the cereals for example, must find it in the soil.

Finally, the doctrine of chemical fertilizers affirms that the constituent substances of the fertilizer cease to manifest their action if they are employed singly in a soil deprived of the three others, and become, in this point of view, of no value to vegetation.

By the light of these ideas we may discover, in the triennial system, faults which our observation, narrowed by the testimony of empiricism alone, could not perceive and arrive at last by the same process of criticism, applied to alternate rotations, at a more complete and entire justification of the doctrine of chemical fertilizers.

You remember, gentlemen, that the triennial system leaves an excess of potash and lime in the soil. After what I have told you of the inertia which strikes the elements of the fertil-

izer, when employed singly, this is a grave defect, since these products cannot manifest their action in the absence of correlative quantities of phosphate of lime and lime.

If we pass from the triennial system to alternate rotations, what do we find? That practice, without other guide than its wonderful instinct, as soon as compelled to stop the fallow, had recourse to the Irish potato and clover, which have need of much potash and lime; and which, beside, draw their azote from the atmosphere, thus allowing the utilization of the products left idle in the land by the triennial system, and arriving at a perfect balance.

We will consult experience, and take for example a rotation of five years, comprehending the following succession of crops:

First year.....Irish potatoes.
Second year.....Wheat.
Third year.....Clover.
Fourth year.....Wheat.
Fifth year.....Oats.

While in the triennial system there was an excess of potash and lime, this time nothing is left idle; and, apart from a small quantity of lime, which is unimportant, the balance is maintained.

ANNUAL BALANCE.

THE ACRE.

	Manure.	Harvest.
Phosphoric acid.....	87 lbs.	75 lbs.
Potash	226 lbs.	118 lbs.
Lime.....	250 lbs.	117 lbs.
Azote.....	180 lbs.	222 lbs.

You may, perhaps remark, that the soil has lost in azote. This loss need not trouble you. It is, in reality, but nominal, since, in the sum total of azote for the harvest, we added that of the clover, which has its origin in the atmosphere.

Are you tempted to deny this origin? It is easy to give you a proof of it. In the economy of alternate rotation, take, for example, wheat, which figures twice: the first time before the clover, the second time after this plant. Now, it is proved, by the universal experience of farmers, that wheat, succeeding clover, always produces more than when preceding it. Why? Because the third crop of clover is turned under green, and the wheat is benefitted by the azote it contains, of which the atmosphere paid the costs.

It is then true, as science, based upon experiment, affirms, that phosphate of lime, potash, lime, united to an azotic matter, are the source and the first matter of all crops, and you see how fully history, questioned without prejudice, confirms the four fundamental propositions upon which rests the doctrine of chemical fertilizers.

Do you not see the consequences deduced from these premises? If it is true, and the fact is incontestable, that there exists deposits of phosphate of lime, potash, lime and azotic matter in Nature, and agricultural efforts are stopped by insufficiency of manure, we must have recourse to these agents to raise our returns to a more and more elevated limit!

This new deduction has not only a theoretic interest for us, it is forced upon us by economic

conditions, prevailing since the treaty of commerce with England.

I act on the principle that Agriculture, with barn-yard manure alone, has ceased, in the larger cultures, to produce profits in proportion to the price of the land and the interest on money, and it is impossible to contend against importation of foreign grain.

Thus you see, gentlemen, it is necessary for us to study the advantages to be drawn by practice from these new agents, which, freeing the agriculturist from these shackles and burdens imposed on him by the necessity of producing his manure, leave him the command of the returns from his land, like the machinist over his machine, by giving more or less steam, or by consuming more or less combustible matter. The fuel of the agriculturist is the first elements of his crops.

Their amount regulates the products of vegetation and the profits drawn therefrom.

The culture by manure alone has still graver consequences for the small farmer. The quantity of manure at his disposal being always insufficient, if it is not, indeed, nothing, the ground is subjected to an inevitably exhausting culture, which, in its turn, reacts upon the general economy of the country.

We will then prove, by examples that cannot be contested, that the Agriculture which operates only with barnyard manure, has ceased to be a sufficiently remunerative industry, and is incapable of benefiting, economically, and in a short time, our worn-out lands.

I draw my first proof from a celebrated place, the farm of Bechelbronn, in Alsace, at a time when it was directed by M. Boussingault, to whom Agricultural Science owes so many useful and estimable works.

The domain in question represents a value of \$57,000, put in working order by a cash capital of \$6650. Now, all accounts paid, the interest on the capital invested fixed at 3 per 100, the profit obtained is \$665 per annum. Is the financial result obtained in proportion to the capital engaged?

However, of the 247 acres, of which the farm is composed, 135 are devoted to meadow, and the part given to stock is in strict conformity to the rules prescribed by the traditions of the past.

Do not think this small profit is the result of defective management; it depends solely upon the method of culture, and to convince you of this, I have only to show you the returns from the principal crops:

Wheat.....	58 bushels.
Oats.....	104 bushels.
Beets.....	52,000 pounds.
Hay.....	8,690 pounds.

This is what the most enlightened practice has been able to obtain while using barn-yard manure alone as an agent of fertility.

A certain school of economists, devoted to Agriculture, says the small profits at Bechelbronn are not due to the mode of culture, but the insufficiency of capital used. Increase the capital, say they, you will have more stock, giving more manure, and an increase of crops.

According to the representatives of this school, alternate cultures, worked by a powerful capital, are capable of leading to the highest returns, and this is, according to them, the whole secret of profit in Agriculture.

How much truth is there in this opinion? The example of the Institute at Grignon will show you.

The rolling capital there was, in the beginning, \$85 the acre. To this advantage we must add another: Grignon had no rent to pay; a lease of forty years had been given, and the rent was to be spent in improvements, of which the establishment for the time reaped all the benefit. What has been the result of this attempt? The negation of the principle, which the respectable founder of Grignon had the hope and the ambition to make triumphant. Grignon has not only not given proof that it produces with profit, or that the profit was in proportion to the capital invested, but it has always refused to publish the accounts of cultures. However, in spite of this reserve toward the public, Grignon has said enough to help us to make up for the absence of these accounts.

[TO BE CONTINUED.]

Scientific Department.

Practical Uses of Lime.

BY JAMES A. WHITNEY.

As a manure, lime is useful to supply the per centage of mineral matter essential to the growth of crops, and to work chemical changes in the soil. For the first named function there is commonly enough lime in natural soils, but for the latter there is seldom enough in marshy soils, or in those containing more than 10 to 12 per cent. of humus or decaying vegetable matter. The amount of lime actually required to supply the needs of the various crops as a mineral constituent may be inferred from the quantity which the crop actually takes out of the land. It has been shown that an average crop of wheat absorbs a little more than 12 pounds of lime to the acre; barley, 19, oats, 15; beans, 87; peas, 70; turnips, 102; potatoes, 60; meadow hay, about 40, and red clover, 103. As lime is readily soluble in the proportion of one part in 400 of cold water, it will be seen that, aside from rare instances, there will naturally exist enough in the soil to meet all the demands of plant nutrition. The exception will be found on dry sandy soils containing little vegetable matter, and with these the supply should be cautiously administered in the form of thoroughly slacked lime, as this will exert the least corrosive action upon the scant per centage of humus, which, on such lands, should be encouraged and retained. In these cases, moreover, it will be best to sow the powdered lime along with the seed, using for the purpose a machine which keeps the alkaline dust from the sower's face and eyes. This mode of treatment may be assumed as also best for light, dry upland loams cropped for a series of years with plants requiring the lime.

Lime, however, owes its value in agriculture essentially to its strong alkaline character, which enables it to combine with acids to form stable compounds, and to displace such acids from previous combinations forming substances injurious to plant life. In nineteen cases out of twenty, therefore, it is a specific for the sourness which both in soils and in muck heaps detracts in very many cases from the fertility of the one, and the fertilizing capacity of the other. In using lime, it is necessary that the farmer should proceed understandingly, and this he is enabled to do by one of the simplest appliances of the laboratory. Litmus or test paper is a porous paper saturated with a substance that possesses the curious property of turning red by contact with acids, and blue with alkalis. By taking a sample of soil, therefore, digesting or boiling it with rain water, and dipping into it a strip of the blue litmus paper, a red tint on the latter will indicate the presence of acids, and show that the use of lime will be beneficial. The same test is recommended by Voelcker for detecting the presence of sulphate of iron or copperas, which is as poisonous to plants as to animals, and for which lime is also a corrective. The chemical action, however, in the two cases is different. With the acids alone it merely forms harmless or neutral compounds, such as ulimate and humate of lime, of little or no consequence one way or the other. With the copperas lime acts to wholly decompose the substance, leaving iron, oxyde or rust, and forming sulphate of lime or gypsum, the former harmless, and the latter capable of exerting at least a slight beneficial effect after the manner of plaster. The litmus paper may be obtained from any dealer in chemicals in cities, and undoubtedly from most druggists in rural villages, and, from its cheapness and utility, should be used by farmers for the purpose indicated much more than it ever has been.

It is not enough, moreover, to know that lime is needed, but the character of this soil must be kept in mind, both in determining the quantity per acre and the form, whether as caustic, slaked or chalky marl, in which it may best be used. Should the land be saturated with stagnant water, and bear a rank growth of wild grasses, no application of lime, no matter how caustic or how profuse, will do any good until underdraining shall have carried off the surplus water, and thoroughly opened the ground to the ready admixture of the alkaline material. Lime will do much good on land rich in organic matter, and where this exceeds seven to ten per cent. with a strong acid reaction by the test above mentioned, the lime should be used in the caustic state. This for the reason that, aside from the chemical action induced by it as previously explained, lime rapidly hastens the decomposition of organic matter in the soil, which, however valuable when existing in proper proportions, is of no benefit when these are exceeded. The manner in which this reduction of organic matter is brought about by caustic lime is probably closely analogous to that by which woody fiber is destroyed by potash, viz., by the abstraction of silica. Any one who has examined the base-

board of a leach-tub will have noticed that the fibers of the wood have lost their firmness and assumed a peculiar texture. The potash unites with the silica, atom by atom, to form a silicate of potash. In the soil the lime, in a similar way, abstracts silica, to form a silicate of lime, while the other constituents, being separated or disarranged, by the withdrawal of the silica, rapidly disintegrate and decompose.

To return to the percentage of humus or organic matter desirable in a soil. This cannot be stated with any accuracy, because it depends not only upon the character and proportions of the mineral constituents, but upon the crops to be grown. A soil with much potash and phosphoric acid should have a good proportion of well decomposed organic matter to retain ammonia and supply carbonic acid, by which the solution of the minerals may be hastened. In general, the use of lime is indicated whenever the proportion of organic matter exceeds ten per cent. An easy method of finding the percentage of organic matter in a sample of earth is to take not less than two pounds of soil, place it in an ordinary bowl and put the latter into an iron kettle, with a layer of clean, dry sand, an inch or two thick, between. Place the bulb of a thermometer in the sand beside the bowl and put the apparatus on the stove. Keep the sand at a heat of from 215° to 230° for a couple of hours, or until all the water is expelled from the soil. Then carefully weigh the now thoroughly-dried sample; put the bowl in the fire and keep it red-hot for a couple of hours, by which time the organic matter will be burned out. Wait until the sample is cooled, and weigh. The difference between the weight before and after burning furnishes the datum, from which, by a simple calculation, the percentage of organic matter may be readily calculated. Of course the bowl will crack in the fire, and some care will often be required to prevent it from falling apart and losing the sample, but by guarding against such a contingency the method will be found sufficiently accurate for all practical purposes. The quantity of lime to be used in any case must be dictated by the discretion of the farmer, and should be increased in proportion to the degree of acidity of the soil, and its percentage of humus. As a general rule it is better to apply moderate quantities, say 10 to 20 bushels per acre per annum, through a series of years, than to give a strong dose at once, and, when convenient, it is better to plow the land and apply the lime early in the fall, so that its action may be well under way before the succeeding crop is sown. Where the organic matter falls below 10 per cent. even if the acidity is pretty strongly marked, it will be more advantageous to use slaked lime, and when the percentage falls lower than 5 or 6, the chalky material found in many parts of the country, and sometimes known as calcareous marl, may be employed to better advantage, especially as such soils, whether sand or clay, need the ameliorating influence of the humus as well as the acid neutralizing action of the lime, which, in a strong or caustic condition, would, as previously inti-

mated, hasten the decomposition of the latter. If gas-lime is used, and is not properly managed, it is full of mischief to the field and of loss to the farmer, but, notwithstanding, it may be made worth from one-half to two-thirds as much as ordinary slaked lime. Gas-lime should always be exposed to the open air, but protected from rain, for several months before it is used, and the mass should be frequently shoveled over, so that the whole may be subjected to the oxydizing action of the atmosphere. This done, it will make a valuable manure, but without this it will be a damage to any one who uses it. The *modus operandi* of the change is very simple. The oxygen of the air converts the noxious substance, sulphite of lime, into the useful sulphate of lime or gypsum.

Refuse and Waste.

There are no such things as waste products in Nature's laboratory, but in man's workshop there are plenty of them. In fact, we make little use of the gifts that are bestowed upon us, a vast majority of them being wasted on account of our ignorance of their value.

If there be anything that characterizes the present age, it is the revolution that has taken place in this respect. We live in the era of saving, and many are the objects now turned to good account which formerly were thrown away. But, notwithstanding the boasted progress of this century, we cast away far too many substances under the names of refuse and waste.

In the cutting, sawing and paring of cork wood there is an accumulation of light material, which is used for packing, filling life preservers and manufacture of mattresses. This refuse, if burned, would produce a smoke that might prove of value in preserving meat and fish; if distilled, would yield peculiar products; and, if chemically treated, would furnish corkic acid, the properties of which are not well understood. The charred cork has long been used for its fine black color, and it is possible that, for disinfecting and filtering purposes, it is capable of application. Here is quite a field of research for any one who has the knowledge and leisure.

What becomes of the buttermilk, after the fatty matter is separated from it? We know that it is extensively fed to the pigs, and not a few people eat and drink it. It has peculiar chemical properties, and is said to work up into cements. Could we not, also, by blowing air through the milk, as well as agitating it, add to the yield of butter, and otherwise modify the character of the sour curd? The fermentation of the buttermilk is not understood by our farmers, nor do they pay much attention to other possible uses of this refuse. As there are enormous quantities of milk used in butter making, it would be well to look into this matter.

So, too, in the cheese industry; in Europe they save the whey to convert it into milk sugar, and this article of sugar can be fermented, and used for many purposes. In homœopathy it already plays an important part.

The root plants growing wild all over our country ought to be examined and experimented upon by agriculturists. We have abundant encouragement in favor of such a course, in the history of the tobacco, potato, sugar beet, peppermint, spearmint, wintergreen, and a host of other natural products that, by judicious culture, have been raised from the rank of weeds to a first-class position among profitable crops. The sugar beet, especially, is worthy of note; it was originally an unsightly plant growing wild in southern Europe. By culture it has been improved and changed in character, and now yields nearly one-third of the total sugar crop of the world, and represents an industry worth some hundreds of millions of dollars. As the Government of the United States has set aside large tracts of land to endow agricultural colleges, it is not asking too much for some of these institutions to cause experiments to be made upon what are now called weeds. Many of these wild plants contain alkaloids, sugar, tannic acid and fiber for paper, and could, by culture, be converted into valuable products. The example of the Massachusetts Agricultural College in this direction is well worthy of imitation.

Sawdust, which was formerly thrown away, is now converted to many useful purposes. The manufacture of oxalic and formic acids from it, is extensively prosecuted in England, and is the source of wealth to all who are engaged in the business; but that is not the only invention that has been sought out with this unpromising material. The hard boxwood sawdust makes an excellent polish for jewelry, and mahogany sawdust is good for smoking fish. Westphalia hams owe their admirable flavor to the wood used in preparing them. Sawdust from the birch cleanses furs; that of sandal wood, cedar, butternut and black walnut, affords volatile oils that find favor as perfumes or to destroy insects. They have a way in France of compressing sawdust into molds suitable for use as artificial wood; and it could also be distilled for the production of creosote, acetic acid, and wood-gas. Some of it could be used for paper, but in general the fiber is too short. A new industry has arisen in converting the sawdust into gun-cotton for the use of photographers, and in the manufacture of a coarse blasting powder. It will thus be seen that sawdust is hardly any longer to be considered a waste product, but it is a great help in many industries.

Vulcanized rubber was long an object of study and experiment, to see what uses could be made of the waste; after the sulphur had been added, it was thought that it could not be worked over, and in this event, the price was likely to remain at a high quotation for many years. Fortunately, the difficulty yielded to the stubborn will of our manufacturers, who do not like to throw anything away, and a process was discovered by which the old rubber could be mixed with the fresh in certain proportions, and thus changed to a useful article. Ivory dust and shavings have found favor in the manufacture of steel plates, and as an article of food. Iron filings, tin scraps,

refuse from galvanized iron, furnace slags, photographer's slops, chimney soot, dead oil, rags, bones, fat, brine, oil from wool, coal dust, cotton seed, sponge, sea-weed, leather scraps, and a host of other things that were useless in former times, are now economized to a considerable extent.

There is a waste in large cities for which there is really no necessity, and that is of the sewage. A vast amount of valuable phosphate goes to feed the fish off the banks of Newfoundland; and if we had the monopoly of the fish, there would be some recompense; as the case stands, we have the consolation of knowing that we feed the fish for other people to catch; and then as a sort of compensation, we send to the islands of the Pacific for guano with which to enrich our land. There is enough compost annually thrown away to increase the value of our crops many million of dollars. The vastness of this waste has probably deterred our engineers from attempting to grapple with it, but that is no reason why the loss should go on forever.

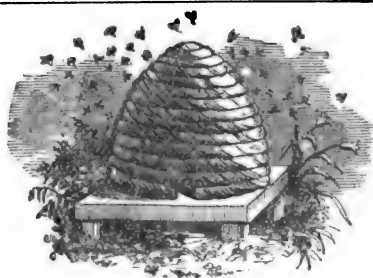
We have thus presented some considerations, on the topic of refuse and waste, which may awaken inquiry in the minds of inventors, and lead to practical results.—*Scientific American*.

Carbolic Soap for Insects.

A few days since, I tried an experiment with carbolic soap in killing insects upon greenhouse plants, particularly the green fly (*Aphis*), which, as everybody knows, is a great pest, and one not readily destroyed, except by fumigating with tobacco—not a very agreeable operation to perform upon parlor plants, or in a conservatory attached to a dwelling. My first experiment with this soap was a decided success, operating upon two hundred roses just in bloom, and it was conducted as follows: Into a pail of warm water I put a lump of soap the size of a small hen's egg. The soap was cut up into small pieces and the water agitated until it was all dissolved, forming a warm suds. The water should not be too hot, but if not above 120° or thereabout, it will do no harm. Into this suds each rose-bush was plunged (holding the pot inverted in the hand), and kept there about half a minute. After plunging, the plants were set aside for a few minutes, then dipped in the same way into clean water, shaking them about thoroughly, washing the leaves, and then returned to their former place in the house. Whether it was the soap or warm water that killed the green fly I will not say, but there is one thing certain, they are all dead.—*Rural New Yorker*.

PERSPIRATION.—The unpleasant odor produced by perspiration is frequently the source of vexation to persons who are subject to it. It is only necessary to procure some of the compound spirits of ammonia, and place about two tablespoonfuls in a basin of water. Washing the face, hands and arms with this leaves the skin as clean, sweet and fresh as one could wish.

The Apiary.



For the Southern Farm and Home.

The Care of Bees in Spring.

As soon as bees commence flying freely they should have placed, within easy access, a shallow dish containing unbolted rye flour, or if it cannot be obtained unbolted, then rye flour mixed with cut straw or hay. This should be continued until spring flowers furnish natural pollen, when the bees will neglect it therefor. It will pay a large percentage upon the investment, if from the commencement of pleasant weather until flowers furnish a supply of honey, you will feed each stock about a half of a pound daily of honey, or sugar syrup, to stimulate breeding. The sugar syrup can be made by dissolving two cups of crushed sugar in one of water, bringing to a boil and skimming off what scum may rise. In movable comb hives this feeding can be done by setting the feeder on top of the frames or honey board; in box hives it is more troublesome, but if pursued will well pay for the time and trouble. As stocks thus fed will have a strong force of workers ready for the honey harvest as soon as the flowers furnish it, they will also cast earlier and stronger swarms.

Those who have not procured movable comb hives should do so at once, and as soon as the weather will permit, transfer from the gum or box hive, for no one in the present times can be said to keep bees advantageously who does not use a movable comb hive.

Stocks in movable comb hives should be examined the first warm day to see if there is brood or eggs. Should there be neither, and a queen cannot be found, a frame of worker comb should be given from another hive having eggs or brood, not over four days old, and after being placed in the hive should be examined at the end of two days to see if the bees have commenced queen cells. Should there be none commenced, it would be well to give a frame of sealed brood, and if after from eight to ten days no queen cells have been constructed, another frame, having eggs or very

young brood in. The young bees that have hatched from the sealed brood will at once construct queen cells, and an examination at the end of two days will reveal one or more commenced. Stocks in box hives should also be examined, and if neither immature bees or eggs are found the bottom board should be inverted, and after driving the bees down, the comb should be examined as much as possible for brood or eggs. Should neither be seen it would be well to give a piece of worker comb with eggs in the cells to such stock, and fasten it between two combs so that it will remain. Should there be no queen the bees will, in most cases, raise a queen from such piece furnished. Such a stock, however, should be carefully watched and examined to be satisfied they have a fertile queen.

Those desiring to improve their bees will, as early as possible, obtain from new sources pure Italian queens, either to cross with the Italians they now have, or if having the black or native bee only, to Italianize their entire apiary at the earliest period possible. I recommend thus changing to the Italian bee, as it is conceded by all apiarians that they are not only more hardy but more industrious, and not as irascible as the black bee—two traits greatly in their favor.

E. J. PECK.

NEW YORK, Feb., 1871.

Does Bee Culture Pay?

We believe that no stock upon a farm will pay better than a few good stocks of Italian bees. They provide for themselves without giving their owner any trouble whatever, and with very little attention at certain seasons of the year, and with suitable quarters provided for their health, shelter and workshops, they will yield a rich crop of fine marketable honey which will always sell at a good price.

If there is a land on earth which should flow with milk and honey it is ours; and yet, owing to our own improvidence, there are very few farmers who have either milk or butter to sell, or even to supply their own wants in abundance, and scarcely one in a thousand who has honey for sale. Tell them that they ought to keep a few stocks of bees and raise honey, and one will tell you "his grandmother tried it once when he was a chap and she had no luck with them." Another will say he does not want to have "his wife and children stung nearly to death by the darned things." Another will tell you how he "knew a man who has kept bees for the last fifteen years and never made a cent from them." Another will say he has more than he can do now (raising cotton, we suppose, on all his land, and hauling bought hay and corn for his stock) and cannot afford to "bother with bee gums."

The management of bees is very simple and can be easily learned. A little looking after in the morning when they fly, and in the evening when they return, a little patch of white clover and buckwheat, and a few plants suited for bee food, and a little protection in winter, are all that is needed.



The Stock Yard.

Rubbing the Tail.

No question is more frequently asked by our veterinary correspondents than how to prevent a horse from rubbing his tail. The habit or vice, or whatever it may be called, is sufficiently annoying to be worth some pains to eradicate, and it is in some cases so inveterate as to tax the skill of the experienced practitioner for an effective remedy. Under certain circumstances a horse will take to rubbing his tail against the stall-post, or any part of his box, and continue the practice until he has removed a considerable part of the hair, and excoriated the surface of the skin. Animals which have been shut up in the stable for some time and well fed, commonly addict themselves to the vice. Turning out to grass in many instances seems to have a tendency to induce an amount of irritation in the part which leads the horse to seek relief by rubbing against any projecting body within his reach. But in very many of the most obstinate cases there is no assignable cause. The animal is in good health and condition; is perfectly, to all appearances at least, free from skin disease; eats and drinks and works well, and yet, while in the stable, never misses an opportunity of rubbing the tail, and this in spite of sundry severe remedial measures which the owner or the groom has recourse to, such as puncturing the part with a knife, rubbing an irritant into the skin, or placing portions of furze on the part of the stable which forms the favorite rubbing place.

Some temporary benefit follows the use of these primitive means, but in a short time they lose their efficacy, and the tail-rubbing goes on as actively as ever.

Necessarily, the effects of repeated friction to the skin of the tail are loss of hair and an abraded surface, which together produce a very unsightly appearance, which most owners of horses would be prepared to incur some considerable trouble and expense to avoid.

Treatment of the vice must be based upon a precise knowledge of the cause, and hence it is seldom possible to answer in a few words the often repeated question, how to prevent it.

First of all, it is necessary to ascertain if the horse is suffering from any skin disease of the nature of surfeit; if his condition is bad, con-

sequent upon want of exercise, with a too liberal dietary, or the reverse; for animals in a state of emaciation are, equally with the plethoric, prone to irritation of the skin. If any skin disease is apparent, there is an end of the mystery, because, for some inexplicable reason, the skin of the root of the tail and the mane always comes in for an undue share of the disease.

Presuming that no symptoms of skin disease are present, it will next be necessary to inquire into the state of the animal's system, as derangement of the digestive organs commonly occasions sympathetic irritation of the integument.

Failing to get evidence of digestive derangement, the next step is to search for evidence of intestinal worms. There can be no doubt whatever that the horse is subject to oxyuria, which is found principally in the rectum and large intestines, causing an intolerable itching in the region of the anus, which induces the animal to rub violently for the purpose of allaying the excitement, or rather in obedience to an impulse which he cannot resist.

The existence of oxyuria may be known by the presence of a yellow powder (ova) round the anus, or still more positively, by the detection of the parasite in the dung. Doubtless other intestinal worms cause sufficient irritation to induce the horse to rub the tail; but the oxyuria is most injurious in this respect of all the internal parasites. Local irritation may exist independently of any of the above stated causes, or it may be that the habit is due to some such nervous feeling as that which induces a human being to scratch the head or perform some other equally unnecessary act expressive of uneasiness.

In all these cases it is shown that the treatment must be adapted to suit the peculiar circumstances of the case. If plethora is the apparent cause, a dose or two of physic with cooling diet and a proper exercise will effect much; if the animal is in poor condition, the opposite course of treatment will be indicated—viz, tonics and liberal diet. Disease of the skin, indicated by an eruptive or scaly condition of surface, will call for local treatment. In addition to the constitutional measures, a thorough washing with warm water and soft soap will be followed by topical remedies of various kinds, according to the severity of the malady.

A mild but effective dressing is made by dissolving one part of sulphuret of potassium (liver of sulphur) in eight parts of water, to be applied

with a stiff brush to all parts of the skin where irritation exists, and particularly the root of the tail and mane. A very hard and scaly condition of these parts will call for the use of a more powerful remedy; and then the old farriers' mange dressing, compounded of equal parts of train oil, oil of tar, and oil of turpentine, will be found effective, if applied with friction by means of an old brush, and repeated in a couple of days, after a good washing with soap and warm water.

Derangement of the digestive organs will require to be met by a course of alternative medicines, with careful dieting, and a reasonable amount of exercise, besides the local treatment. If parasites in the intestines (especially the oxyuris) are the cause of the irritation, enemas of salt and water, of the strength of half an ounce to a gallon, may be given occasionally with advantage, although this treatment is not intended to supersede the local remedies.

One important point is to prevent the continuation of the rubbing by any mechanical means which ingenuity can suggest. It may be possible to effect this by a re-arrangement of the horse's position; but, if not, pulling the cloth so far back as to cover the part of the tail which is usually rubbed will in some instances cause the animal to discontinue the habit. Tying up the part in a calico bandage has the same effect, but is more difficult of arrangement, although in some cases it may be necessary to adopt it.

Ordinary mercurial ointment (blue ointment) is sometimes successful in allaying the irritation, and in some cases glycerine is beneficial; but now and then cases are met with in which nothing is of use—the part becomes the seat of a morbid sensibility, and the animal never ceases to rub it when an opportunity occurs. It will be gathered from these remarks that there is no "specific" for the cure of the annoying habit which is so constantly complained of, but that the treatment must be regulated by a variety of circumstances.—*London Field.*

Chest Founder.

Instead of being a disease, chest founder is merely atrophy of the muscles of the chest and shoulder. This atrophy is caused by the aversion of the horse to lifting his feet when attacked by laminitis or acute inflammation of the sensible laminae—sometimes called founder of the feet. Laminitis is caused by driving a horse until heated and then allowing him to become chilled, either by standing in the cold or by drinking cold water. The disease does not appear when the horse is put in the stable at night, but in the morning he will be found so stiff as to be incapable of moving. Should the disease be promptly attended to while yet in the acute stage, there is very little danger, but if improperly treated it becomes chronic and causes chest founder. On examining the feet, the os pedis or coffin-bone will be found displaced and pressing down on the sole; in consequence, the sole is convex, and while in

action, the heel is placed on the ground first. In this state the horse will only elevate the feet enough to extend them forward. He will not lift them as high as formerly, because the force with which they strike the ground will cause greater pain. In order to relieve the fore feet of as much weight as possible, the animal will, while standing, draw the hind legs forward and under him, thus allowing the fore feet to extend forward and the humerus or shoulder bone to project and form the hollow chest. If the operation of neurotomy be now performed, by which the sensibility of the feet will be destroyed, the animal will resume his proper position and the hollow chest will disappear.—*Wm. Somerville, V. S., in Live Stock Journal.*

Pig Breeding and Feeding.

Mr. Machi contributes to an English journal the following interesting article on this subject:

The same rule applies to pigs as to other farm animals—choose a good breed, especially in the male parent. Where there is a great natural tendency to fatten, follow the advice of the late Mr. Fisher Hobbs, who said, when selling a breeding sow: "Let her work hard for a living; don't feed her bountifully, or she will get fat and have no pigs, or very few." There was wisdom in this; but remember that the kind of food you give her is a most important consideration. The fetus cannot be properly formed unless the materials are of the right sort, for there must be the elements of bone, muscle and fat—the latter alone is of little use; therefore, avoid the fatal mistake of giving to the sow a large quantity of roots before parturition. The same mistake is often made with sheep and cows. If a sow is allowed to range at large, she does well, having access to pasture, because in a pasture we have a great variety of plants possessing various and valuable qualities, aromatic, condimental and others, generally available to the juvenile formation and development, which the natural instinct of the animal teaches her to select. This may be supplemented by pollard, bran, a little meal, boiled potatoes, a few Swedes or white turnips, but very few mangolds, especially when fresh and succulent. A moderate supply of peas, beans and barley, or soaked Indian corn, may be added; also tares, clover, and green beans with the pods on. Cabbage is a very safe food. Nothing comes amiss to a sow. The great point is to take care that the food should consist of a variety, and not, as is too often the case, confined to one sort—especially roots. After parturition roots may be much more liberally given, especially cabbage, in conjunction with other food; but as the period of parturition approaches, and especially immediately after parturition, to guard against fever, the diet should be sparing and cooling. I know some who invariably give an ounce of Epsom salts in the liquid food to the sow after parturition. After recovering from the excitement, the necessary materials for milk-making must be contained in the food. Cottagers are often

successful with their sows, where they have a chance of roaming in lanes and coming home to receive a little meal, boiled potatoes, pot liquor, vegetables, &c. In cold weather, warmth and shelter are essential. Never allow a pig to bury itself in stable manure, or make holes in the floor and lie in them, for cold will strike the heated side and give him heaves or lung complaint. Young pigs, when taken from the mother, should have pollard, a little meal and a variety of food, but especially skimmed milk with fine pollard or middlings; as they grow older, peas, soaked Indian corn, &c. A few roots and green food are always acceptable. For fattening pigs nothing beats one-third pea meal and two-thirds barley meal; if mixed with skimmed milk, so much the better. Pigs may be fattened very rapidly by steamed roots mixed with meal or boiled potatoes, the food given warm. Although bulky looking, they will not weigh so well, or eat so well as those fattened on pea and barley meal, with or without milk. I was very successful in fattening large hogs in hot weather by placing them on sparred floors with a pit under them. There is a natural tendency in pigs to huddle together; if placed on soft barley straw, there is no circulation of air under them; therefore stiff, reedy wheat straw is much to be preferred. They get fever in hot weather, unless there is a circulation of air around them.

The latticed or sparred floors have an immense advantage in this respect. The urine passes through and away, and they lie clean, cool and dry, with air circulating around them. Pigs naturally deposit their excrement in a corner, away from their bed. When barley was 18s. 6d. per qr., I fattened about 400 pigs, and was always very successful in avoiding disease; they were all placed on sparred floors. In hot weather we showered upon them occasionally from a jet about 80 gallons of water per minute. After the first alarm they enjoyed it. Their skin became as clean as the back of one's hand, and they fed and prospered most satisfactorily. It pays to give a pig, when he first comes from market, a good scrubbing with soap and water. In winter it is necessary either to put some straw upon the sparred floor or to enclose the place so as to keep it warm, providing sufficient ventilation. Pigs pay (in manure) as well or better than most animals, but the meat market will not carry a heavy supply, for, unlike beef or mutton, it is easily over-supplied. October and the cool months are the best for town markets. Fat pigs in the country sell well at and immediately after harvest; also at hoeing time. Pigs, like other farm animals, should always have access to water, also a lump of rock salt. Bear in mind that pigs have no wool, and if well bred, very little hair; therefore they require warmth, if you desire to economize food and produce fat. As sows are very apt to overlie their young, this is easily prevented by a ledge or board about eight inches wide, projecting from the wall of the piggery six to seven inches from the floor. The little pigs are safe from pressure under this ledge.

An Experiment in Feeding Horses.

The London Omnibus Company uses six thousand horses. To economize in feed is an important matter, and has led to several tests, the result of which is recorded as follows:

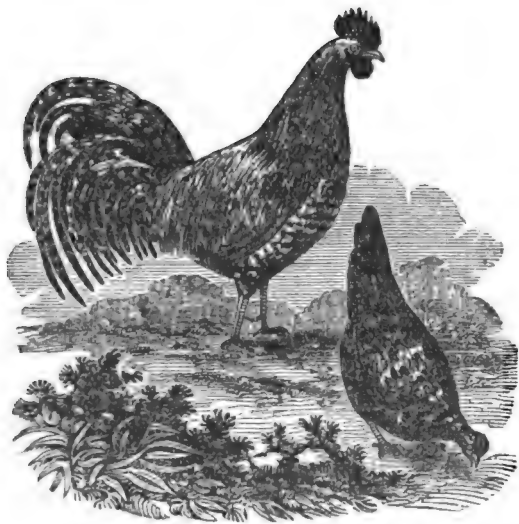
To each of the three thousand of their horses they gave a daily allowance of ground oats sixteen pounds, ground hay seven and one-half pounds, and cut straw one and one-eighth pounds—the hay and straw being cut into pieces about half an inch long, and well mixed up with oats in a little water, thus making twenty-six pounds of food for each horse. And to each of the other three thousand horses they gave a daily allowance of whole or unbruised oats nineteen pounds and uncut or whole hay or straw thirteen pounds, without any water, in our old fashioned way, making thirty-two pounds of this food, for each horse. And what was the result? Why, it was soon discovered that the horse who was fed on the twenty-six pounds of ground oats remained in as good a condition and could perform just as much work and do it just as well, too, as the horse did who consumed thirty-two pounds of food, thus showing a saving of six pounds of food per day in favor of bruised oats and cut hay.

What Causes Horses to Slabber?

At the late meeting of the Experimental Farm Club this question was discussed, but no one could say what it exactly was that made second-crop hay produce this slabbering of horses. A veterinary surgeon who was present could not enlighten the club in the least. Some thought it one thing and some another, but there was no one cause specifically singled out. Still there must be a specific cause. For it is well-known to all observers that not only second-crop clover hay will produce the slabbers, but the grass and any fall grass that we have ever tried. Some veterinary surgeons attribute it to a fall weed; but we think it is in the grass itself, the second crop of which contains a peculiar bitterness, for want perhaps of succulence and from its advanced state of maturity. It may possibly be a late weed, but if so it has not yet been discovered.

As to the remedy, the best is to stop feeding the second-crop hay or grass. In two very severe cases on our own premises last fall, it passed off in a few days by removing the cause of it. In the case we speak of, however, it was a flow of water only from the mouth. Gallons must have come from each animal, preventing them for some time from taking their food.—*Germanatown Telegraph.*

CORNS on horses' feet are the result of bad shoeing or allowing the shoes to remain on the feet too long without being reset. The only way to relieve corns on the feet of any animal is to remove the cause—pressure. Bar shoes answer best for horses' feet. When these shoes are properly fitted, the heel of the foot should not come in contact with the shoe, thereby relieving the seat of corns from pressure. The foot should be kept soft by stuffing, etc.



Dominique Fowls.

This is a native breed of fowls of considerable merit, the blood and purity of which remain unadulterated in a remarkable degree. They are a speckled, variegated, pencilled fowl, of the ordinary size of domestic fowls. Before the introduction of the Asiatic breeds, and for laying, no better fowls ever existed, in the opinion of a great many breeders of poultry. Thirty years ago this breed, at the North, was very popular; but after the great "hen fever" of 1852 to '55, when a farmer would give one of his best cows for a pair of Shanghai chickens, three months old, and when Brahma pullets sold for \$50 each, this, with other native breeds, was allowed to disappear to a great extent, and its place to be occupied with fowls that could eat off the head of a flour barrel, and whose crow would arouse the people from their slumbers for miles around. At that time a friend of ours was offered \$500, by a London publisher, having a country residence, for three Brahma pullets and one rooster. Even now we hear of choice imported fowls selling in New York, at the great poultry fairs in that city, as high as \$120 a trio. No breed of fowls is worth over \$5 to \$10 a trio to any person, unless it be to one who can speculate on their increase, and sell to others at about as high a price as he paid himself.

Dark Brahmas.

The popularity of the Brahma breeds of fowls is not equalled by that of any others, with possibly one or two exceptions. And if we speak of fowls judged solely by their economical qualities, we must pronounce them to hold the first position in popular favor. In truth, they well deserve this, for they are healthy and produce vigorous broods of chickens, which mature easily and rapidly. They are good in flesh, but do not certainly possess the exquisite flavor of the game. They are well enough for the

table, and are almost always fat, both winter and summer, and the eggs are of fair size. They are good setters, careful mothers, and no breed does better in confinement than they, although being better foragers than some others, it is not so economical to keep them shut up.

Every fancier knows the oft-repeated discussion as to their origin, and we will not detail it here. We consider the Brahma a distinct breed at the time of its importation into America, and hold the importation to be a fixed fact. We furthermore think that they were originally of the same stock as the Cochins.

Of the varieties, the Light and the Dark, the latter is of later origin, the Light having appeared first. A good Dark Brahma fowl is quite a large bird, and will weigh nine pounds for the hen and twelve for the cock, or even more than that. The shape is not elegant, judging as we judge the game, but is none the less pleasing to the eyes of

many. The short neck, plump body, short, feathered legs and small tail, all together suggest to the observer the idea of quiet and fruitful domesticity, which is in harmony with the nature of the fowl.

The color is mainly a dark penciling. In the hen, this is very uniform over nearly the whole body, the head being gray, and the neck hackle white with black stripes. Only the tip feathers of the tail are pencilled, however, the rest being black.

The pencilling consists of a distinct, clear dark gray marking over a dull gray ground, the form of the marking varying somewhat, and there being different opinions as to the best shape, but all agreeing in requiring distinctness of outline.

The cock is not pencilled, but is about equally white and black, the black appearing in stripes on the hackle, back and saddle feathers, and together in the deep black tail, giving the character to the fowl.

The wing coverts, a large spot on the end of the secondaries, breast, thighs, fluff and shank feathers, are also black, although the breast, thigh, fluff and shank feathers are often partly white, but pure black here is certainly better.

The Dark Brahma breeds very true; however, any admixture of blood will soon show itself. Any touch of Light Brahma blood is readily detected by the lightish breasts and brown patches on the shoulders, and in the cock the white spots on the breast are much more numerous than usual. Besides, the flocks bred from such birds are very unlike each other.

These defects show themselves long after a single cross has been made, and, consequently, to avoid the disappointing effects of reversion, the fancier must know the pedigree of his stock for generations. But with care, no breed is more satisfactory in this respect.—*Live Stock Journal.*

Keep but One Variety.

There is a large class of persons who buy and exhibit fowls merely from a feeling of pride in their possession; not that they love or care for them in reality, but from the same feeling which leads a wealthy man, with no love whatever for art, to buy and hang on his walls the most expensive pictures. There may be at first a slight passing interest in the birds, but that is all; and when the fowls that have been thus purchased, regardless of expense, die, or get out of condition from overshadowing, the interest comes to an end along with the success, for their progeny is in all probability worthless. Disgust follows, and another so-called fancier "gives up" a pursuit which he never really entered into at all.

We shall, however, suppose that from some cause or other a real interest in and love for fowls has been awakened, and that the amateur desires to enter upon the cultivation of some one or two of the many varieties which await his choice. We say one or two, for to attempt at first to keep many is to fail almost of necessity. Each variety demands not only judgment and care, but to some extent a trained eye. It will be found, in fact, that one variety spoils and biases the eye in judging another of a very different character; and though long experience and the constant sight of birds will to some extent correct this, as in the case with a few large breeders and judges, we have heard one of the best judges in England say that he could never judge a Game class to his satisfaction if compelled to take it immediately after judging Dorkings. But attempting more than one or two varieties, also, all the practical difficulties of breeding, hatching, rearing and selecting increase tremendously, and what might be a pleasure becomes really a painful anxiety, burdensome alike to mind and body. Even of the great breeders, who to a fair extent have succeeded in all the varieties they keep, scarcely any have succeeded in keeping a commanding position as regards more than one or two, and this lesson should be well regarded by the mere amateur.—*Wright's Illustrated Book of Poultry.*

Raw or Cooked Food.

We believe in due caution in applying the needs of one kind of animals to another, as the most outrageous blunders are sometimes made in so doing. Yet we wish that poultry-breeders would take a hint from the experience of breeders of other stock in the matter of cooked food, particularly for delicate, sick and valuable fowls.

Cooking adds to the amount of nutritious matter in some kinds of food, and in all, or nearly all, softens it and renders it easy of digestion. (Cooking, indeed, is not the only method of softening grain. It is sometimes fermented, thus advancing it one stage in the process of digestion before it enters the stomach.)

The evidence for horses, cattle and swine, is greatly in favor of cooked diet, both as to the

health of the stock, and the per centage of gain in weight.

We boil corn in the kernel, or even in the ear, not letting the ears rest against the bottom of the kettle. Mush is, of course, just as good, but you must grind it and stir it while boiling.

If you use cooked food, alternate it with raw, for the sake of variety, but do not give them together, as the hens will not, as a general thing, touch the boiled corn if the uncooked article is at hand.—*Live Stock Journal.*

Lime.

Some of our farming friends appear to be deeply impressed with the notion that hens need no food but corn in some one of its forms. But we ought not to forget that "food" means the material for everything that comes out of the system, and that if any particular race takes up any special branch of manufacture, they must have the raw material. All animals consume more or less of lime; it is one of the principal elements entering into the composition of the bones, but the hen needs an extra supply.

The domesticated hen also needs more than wild stock of any sort, since she is stimulated to a greater production of eggs. In consequence, we must give her more than is contained in the various grains.

The most useful forms in which to give lime are pounded shells, pulverized mortar and crushed bone. On the whole, we prefer the former. Its preparation makes a good stint for the boys. We object to bone meal if not perfectly sweet, but a good, sound article is a first rate thing for this use.

Feed lime most abundantly at the time when hens are laying most freely, and anticipate, if possible, by beginning early in the season, lest your fowls eat a shellless egg and acquire bad habits.—*Ibid.*

Number of Hens to a Cock.

In poultry yards arranged in the shiftless manner of most farmers, this question is obviated by the selection, through frequent combats, of the more vigorous cocks; but in careful breeding it becomes often a difficult question, and the decision cannot be made, in most cases, without careful observation.

If there are too many hens, the vigor of the cock will be impaired, more or less of the eggs will fail of impregnation, the number of chickens hatched will be smaller, and their power to get over the dangers of chickenhood will be diminished. If there are too few, he worries the hens too much.

There is certainly a difference in the capacity of the males of different breeds. A good, vigorous Brahma or Cochin cock will serve from six to ten hens, while a cock of the smaller and more active Leghorns or Hamburgs, will serve a dozen or fifteen. Better have too few hens than too many.

If thou art a master, be sometimes blind; if a servant, sometimes deaf.



The Vegetable Garden.

The principal "work for the month" in the vegetable garden is to keep down weeds, mulch the plants to guard against drought, and keep them watered when they need it. We are strongly in favor of mulching. We believe that mulched plants will grow faster, thrive better, and suffer less from the dry spells of midsummer, than those that are left "dry so," and as it is very little trouble to strew three or four inches of pine straw or leaves about the roots of the plants, we advise our friends to try it. In dry weather water should be applied freely and regularly. Apply it *through* the mulching not *under* it. Plant snap beans, English peas, corn, okra and melons for a succession.

Toward the end of the month set out cabbage plants for fall and winter use. The same as to brocoli. Sow cabbage, celery, and cauliflower seed under shade for fall planting. Water freely until the plants come up.

Continue to transplant tomatoes, and celery, taking care to shade the plants from the sun for a few days until they become well established. If the tomatoes, melons, or cucumbers are inclined to run too much to vine, pinch off the leading shoots and it will check the growth and promote the maturity of the fruit. Tomatoes sown now will produce a crop before frost. Onions as they mature, should be pulled up, dried in the shade, and hung away in bunches in some place where the air can get to them. As soon as the tops droop the onions are fit to pull. Irish potatoes planted now and deeply mulched will give a good crop before frost.

Liquid manure alone should be applied to the garden now; and that applied judiciously will pay handsomely for the trouble.

The Orchard.

Where the fruit is heavily set and the branches are over loaded, pull off from a third to a half, and the remainder will be much better fruit. It requires nerve to do this where people do not know the advantage to be derived from the operation. But if it is once done the benefit will be demonstrated. Peaches and other stone fruits may now be budded, and all fruit trees can now be beneficially pruned into shape. If you have young pigs turn them into the orchard to eat the fallen fruit, and allow them to "nose" about the roots of the trees, as their doing so is the best kind of stirring the soil. We confine our advice to young shoats. Old sows and mature hogs are too much of the "subsoil lifter" order, and they have been known to try to climb trees to the destruction of many branches.

Do not be afraid or too busy, or too forgetful to thin your fruit. In all the orchards we have seen this year it would be a benefit to pull off fully one half the crop.

The Flower Garden.

It is almost too late to sow flower seeds, but sooner than have none, there are some hardy annuals which may be sown with reasonable hope of success. Destroying weeds, and watering freely (not sprinkling) with rain water drawn from the well in the morning and allowed to stand in the sun all day—are the chief things to be done now in the flower garden.

Bulbous roots which flowered in the spring should now be taken up, or if not, well mulched until taken up in the fall to be divided and

re-planted. It is now a good time to bud or lay roses. If the green apis is troublesome to the roses or other plants, smoke him out by tobacco or sulphur smoke. As in the vegetable garden so among the flowers, apply none but liquid manure. If you cut down, mulch heavily and water liberally, dahlias which have gone out of flower, they will grow up again and bloom as abundantly as the first time.

Some Rare and Beautiful Hardy Flowers.

PENTSTEMON HARTWEGII.

This is one of the noblest and most beautiful of American mountain plants. It attains a large size and a considerable amount of space, and a strong, well-drained loamy soil is necessary for its perfect development. The habit is all that could be desired, and it continues clothed with healthy green foliage down to the very base till winter comes. The leaves are opposite, without stalks, lance shaped, quite entire, and destitute of any kind of hairiness. The flowers are in large panicles at the ends of the branches. The corolla is two inches, or at least an inch and a half long, of a rich dark red color on the outside, while the inside is traversed by bands of a pale tinge. It blooms late in autumn, and might well be turned to account for green-house decoration. At any rate it is far superior to the majority of the objects used for that purpose, and is available at a time when ornamental material is scarce. On the rock-work and open border, which are its most suitable quarters, it deserves the best possible position. It is readily increased by cuttings, which ought to be made when the shoots are young, and, indeed, the renewal of the plant by some such means is absolutely necessary for the preservation of health. It inhabits elevated places in Mexico, and sometimes receives the name of *P. gentianoides*.

PENTSTEMON GLABER.

This is a dwarf species. The leaves are without stalks, lance-shaped, and have undulating margins. The flowers are arranged at the ends of the shoots, in a sort of compound raceme. The corolla is large, very beautiful, blue above, and gradually changing into a white color below. It should be increased and cultivated generally in the same way as *P. Hartwegii*, and is extremely well qualified to grace either the rock-work or open border. It is a native of North America.

PENTSTEMON PROCERUS.

This is seldom more than a foot high. The leaves are lance-shaped, and entire, the upper ones being sessile and the lower stalked. The flowers are arranged racemosely, but they are so crowded as to form a whorl, which surrounds the stem. The blossoms expand during summer, and continue gay for more than a month. The corolla is of a richly varied purple color, being also paler on the outer than the inner side. It is a native of the Rocky Mountains,

and should be treated and increased in the same way as *P. Hartwegii*. It is entitled to a prominent place on the rockery and open border.

PENTSTEMON OVATUS.

This magnificent plant inhabits regions far above the level of the sea, in northwest America. The leaves are heart-shaped, the lower ones being stalked and notched, and the upper ones sessile and entire. The flowers are disposed in racemes. The corolla is purple on the outer and azure-blue on the inner side. It is quite hardy, variable in height, should be cultivated and increased in the same way as *P. Hartwegii*, and is qualified for positions similar to that delightful sort.

PENTSTEMON SPECIOSUS.

The specific name here is truly descriptive, for this is a very lovely sort, which blooms during nearly the whole of summer and autumn. The lower leaves are similar in outline to a spatula, quite entire along the edges, and furnished with stalks. The flowers are arranged in large panicles. The corolla is about an inch long, and of a most lovely blue color. It should be increased by seed sown in spring, and is adapted for the same positions as *P. Hartwegii*. It is a native of North America.

A Suggestion for Early Strawberries.

An English journal states that "about ten thousand strawberry plants are annually forced in pots in the gardens of Sandringham (the Prince of Wales' palace.) The usual course with all the earlier batches is to start them in pots plunged in warm leaves; they are then placed on shelves anywhere and everywhere that room can be found for them, and gathered in quantity from the middle of February till they come in out of doors." Commenting on this item, Thomas Meehan, of *The Press*, remarks that, the popular view to the contrary notwithstanding, such luxuries are less costly than they seem, and that royalty ought not to be permitted to monopolize them. As a matter of course, to have strawberries very much in advance of their season it would be necessary to grow them a few months in pots, and take care of them much as is described in the extract quoted; but many persons might have them at a little later date without this trouble by simply covering the ground in which they grow with a few hot-bed sash. It is remarkable, Mr. Mehan thinks, that country gardeners do not make more use of glass frames for getting things earlier than they do. Glass is cheap and the sash frames are not very costly. One can glaze for himself, and any farmer can make frames good enough for the purpose. They come into use in so many ways that every farm garden ought to have a few of these sashes on hand. For strawberries, all that is necessary is to have a bed growing on some nice warm spot of ground, and then set one of the frames over it. It takes very little heat to bring forth strawberry blossoms, and the glass covering protects them from frost and cold at

night. A frame five feet wide and twenty feet long, fixed in this way, would give many quarts of strawberries for several weeks before the regular crops come in the open ground.—*N. Y. Tribune.*

Experiments in Potato Planting.

In an essay on Potato Culture read at a Meeting of the Central New York Farmers' Club, April 18th, by Mr. J. H. Scoville, the details of an experiment made in the seeding of potatoes were given. The following table gives the general result, which is figured out for an acre—sixty pounds being assumed as a bushel—both the seed and the crop being carefully weighed:

No.	Seed used.	Large Potatoes.	Small Potatoes.	Total Product.
1. One eye to a piece and one piece to a hill.....	3½	102½	5½	108
2. One eye to a piece and two pieces in a hill.....	9½	175½	16	191½
3. Two eyes to a piece and one piece to a hill.....	8 4-5	180½	14½	175½
4. Two eyes to a piece and two pieces to a hill.....	13½	173	21½	194½
5. Three eyes to a piece and one piece in a hill.....	10½	175½	21½	197½
6. Three eyes to a piece and two pieces in a hill.....	18½	164½	41½	205½
7. Four eyes to a piece and one piece in a hill.....	12½	156½	22½	179
8. Four eyes to a piece and two pieces in a hill.....	27½	146½	47	193½
9. One large potato in a hill.....	4½	168	62	230
10. One large potato divided.....	22	163	28½	191½
11. One small potato.....	10½	138	23	161
12. One small potato cut in two.....	6½	125	18	143
13. Two small potatoes.....	21½	132½	46½	179½
14. One medium potato.....	26½	159	36½	195½
15. One medium potato cut in two.....	16½	154½	26½	181½
16. Seed end.....	11	158	24½	182½
17. Seed end cut off.....	29	156½	38	194½
18. Two medium potatoes cut in two, four pieces in hill.....	30½	191	38	229
19. One large potato, two eyes dug out.....	35	114	14½	128½
20. One medium potato quartered four pieces in a hill.....	27½	168	62	230
Field crop.....	.....	156½	28	184½
Field crop "Oneida peach-blow".....	.....	194	21½	215½

In relation to No. 19, where the eyes were all removed from the potatoes planted, Mr. Scoville says: "Every eye was carefully cut out; the potatoes were then re-examined to see that there could be no mistake, and examined by another party previous to planting. Out of the seventy hills planted ten were missing, and three of these were scratched up by fowls, which would have grown. Some of them were just coming up at the first hoeing, and many did not come up for some time, and were very small at the second hoeing. But for all this, though planted as late as the first of June, the yield was at the rate of 128 bushels per acre. I am satisfied that if the planting had been done early in the season nearly every one would have germinated. It proves one fact conclusively: that it is possible to construct a machine for cutting and planting potatoes."

Kill Less and Cure More.

"Oh, you can't raise hay in the South; it is n't a grass region; the grasses won't succeed in our hot climate." So we say; at least our actions say so; and "actions speak louder than words." Yet we farmers every year from April to September, spend most of our time trying to destroy this very little article of grass which we think we cannot raise. An article so hateful when it attempts to grow for us here at home, and so precious when we see it in a western package, shipped to us on a railroad from Ohio or Illinois splintered with chunks of red oak and hooped with hickory poles, which we are pleased to take, along with the grass they hold together, at two dollars and twenty-five cents a hundred. A pretty fair price for folks living in the country to pay for firewood.

Verily, we farmers do go for this grass in our fields in a different way from that in which we go for it in Eufaula. There it is something most lovely and desirable. We are ready to borrow money at 2½ per cent. a month and interest, and mortgage our mules and crops just to get a little of it; and we unhitch these mortgaged mules from the place where they are needed, and lose a whole day out of our mortgaged crop, to haul it to our empty racks. But let it show its little green blades in our fields, and it wakes up our farming fears and wrath. We charge it like an enemy. We come down upon it like a snake. We glory in its destruction, and boast to our neighbors extensively of how we have slayed it.

Ask a hard working, sunburnt farmer in the summer, with perhaps a bale or two of western or northern hay back in the crib, what he has been doing, and he'll tell you proudly, "Fighting grass, killing grass. I've never had such a time in all my life—it is the hardest thing to get under surely. I have worn out myself and almost killed my mules, a killing the abominable stuff; but thank God, I have killed it sure at last, and I don't think you can find a hatfull in the whole plantation. Whee-w," wiping from his brow the sweat of honest labor, "John, give the mules a little of that hay; they need it mightily, for they are awful thin. And I have to go down to Eufaula Saturday for a few more bales to carry me through. I tell you what, hate to make that trip; for they have been working powerful hard the last two weeks in this hot weather; still I must buy a little more hay; but thank the Lord, I am clear of grass." Isn't that the way we talk and do? True, oh King! and year after year "the very same."

Now, brother farmers, would n't it be a good thing for us to try our hands at a little curing some grass, instead of killing all? It costs us far less labor to cure it than to kill it. Only one plowing and no hoeing at all; and then the mowing and saving, and that after corn, and may be cotton, is laid by. And when it is cured, it is worth as much as anything else which we could raise upon land, besides exhausting it much less. And then it is stacked or housed on the plantation, and don't require to be hauled

there. Is not all this true and certain? Can we excuse ourselves for our practice on the subject, and will we not try to change at least this one bad habit, which is hurting us as farmers?

Now for an experiment. There is a citizen of Eufaula, who is ready to assist us in this new line of farming industry; and who understands the business which he undertakes. He has the experience as well as the mowing machine and rake harrow. He proposes to any farmer who is willing to raise on his plantation the sweetest and most valuable hay, to wit—that made from the crab grass we are killing, that if the farmer will plow up a piece of suitable land, the richer of course the better, he will furnish the harrow to prepare and make the surface smooth, and then when the grass, which is sure to come upon it, though expecting to be killed, gets into bloom, he will come with his mowing machine and rake, and the farmer furnishing two mules to pull it, and two hands to help, he will himself drive and manage the machines, and cure and save the hay—one-half for the other.

He assures us that from off one acre of fair land, two tons of this hay can be harvested. This hay now is worth \$42 per ton. So that the farmer, with the small amount of labor required as stated above, will make \$42 worth on every acre, of the very article he needs, without diminishing in any sensible degree, his crop either of corn or cotton. Who will try it? It is not at all too late to make the experiment this season. If successful, it will be repeated of course, and soon more mowers will come to Barbour, and less money every season go out of it for grass—and that will be a reformation. Any one desiring further information on this subject can obtain it from Mr. Young Johnson, of Eufaula, or Mr. Wheeler, at our postoffice. Let somebody try it, see how it works, and report to our next fair in the fall. Whoever succeeds deserves, and doubtless will receive a premium.—*Eufaula (Ala.) Times.*

A Word for the Granges.

President Welch, of the Iowa State Agricultural College, one of the most efficient institutions in the whole country, and located in a State which has had more experience with the Granges than any other, recently addressed the Patrons of Husbandry as follows:

Our bond of union is the congeniality of like pursuits. The leading purpose of the Farmers' College and the Farmers' Grange, though gained through different paths, are largely the same. The Grange seeks to aid the farmer by multiplying his means of intelligence, by giving him the mastery of all the better methods and processes of the farm, by quickening, intensifying and elevating all the better elements of his social life. The Grange would secure the farmer against the torpidity of solitude and the extortions of monopoly; would kindle in his breast a steadier zeal and a steadier courage; would touch all the labors of his hands with the glow of enthusiasm;

and, in short, would do for him what skillfully organized effort has already done for every other great human industry on the round earth. All this the Grange aims to do by means which are the most immediate and direct. All this also the Farmers' College strives to do by another method; by giving a knowledge to such as will seek it, of all these practical sciences that underlie the processes of agriculture; by training and sending forth men who may become, as the years pass, the leaders in the grand movement which the Grange has inaugurated. It is in harmony with this noble purpose that the College, instead of draining the rural districts of their most promising youths and graduating them to swell the over-crowded ranks of the law, or to wander in perpetual search of a vacant pulpit, sends back the farmer's son to the farm, so educated that he revitalize all its operations, and give them a new and enduring interest. Such are the benign objects which these two great enterprises are organized to further. And, mark you, each seeks to accomplish its aims by *combined* effort—the College, on a closer and more concentrated plan; the Grange, on a wider and grander scale. And what effort of man for the attainment of good, or for defense against evil, has ever reached its final triumph, since the world began, without combined effort? What progress, moral, social or industrial, was ever achieved without combined effort? Combination is, in fact, the great instrument of progress. Civilization would relapse into barbarism without it.

And who shall dare say, in the face of all this marvelous advancement, this vast accumulation of the results of hard thinking, this imperative demand for skill and experience, and judgment and common sense, that farming is a dull, stupid, humdrum business; that only stupid, humdrum people should engage in it; that the brightest boy of the farmer's family must be unfitted for the farm by sending him to College to learn the dead languages, or crowned with a stove-pipe hat and dispatched to the city to engage in the more exalted (?) employment of selling needles, and buttons, and tape?—*Western Rural.*

RASPING HORSES' FEET.—Rasping a hoof until it will spring under your finger, is far too dangerous a plan for making things look well. This rasping takes the strong surface off the hoof, and nature trying to make up for the evil done by injudicious hands, forms a hard, glossy surface to protect the foot. This glossy surface takes the place of the previous tough horn, and at the next shoeing the foot will probably split a little at the nails, and not unfrequently the nail punches a piece out before it.—*Cor. Canada Farmer.*

CURE FOR LICE ON STOCK.—Get about a tea-cupful of fish berries (*Cocculus Indicus*) bruise them and soak for a day or two in a quart of water; get a washpan and sponge, apply, and you will know no more of lice. Try this, and you will thank the giver of this as I have done.

Household Department.

Domestic Receipts.

MUFFINS.—Three tablespoonfuls of butter, melted in three pints of milk; when cold, stir in six well beaten eggs; one teaspoonful of salt; two tablespoonfuls of yeast; flour enough to make it as thick as you can beat it; beat it from twenty minutes to half an hour; then set it to rise; it should be light in three hours.

CALVES' FOOT BROTH FOR THE SICK.—Boil two feet in three quarts of water, until it is wasted to three pints. Strain it and set it aside in a cool place. When cold take off the fat. Heat a little at a time as it is wanted, and add salt, nutmeg, and if approved a spoonful of good wine.

SODA SPONGE CAKE.—Half a teacup of butter, two of sugar, three of flour, and four eggs. Mix the butter and sugar, then add the yolks of the eggs, well beaten, and afterward the whites, mix one teaspoon of cream of tartar in the flour, and pass it through the sieve; stir it in the cake, and lastly, dissolve a half-spoonful of soda in half cup of milk, and strain it in the cake, mix quickly, and bake at once in a quick oven without scorching. Flavor to suit the taste. It should be eaten while fresh.

SOFT GINGERBREAD.—Melted butter half a coffee-cup, molasses two coffee-cups, one egg, one tablespoon of ginger, one coffee-cup of sour milk, two heaping teaspoons of soda added the last thing before baking, and flour to make a stiff batter. Bake at once in an oven with steady heat. No cake burns as easily as molasses cake.

CUP CAKE.—One cup of butter, and three cups sugar, worked to a cream, a half wine-glass of wine, five eggs, beat separately, one teaspoonful of soda sifted with five cups of sifted flour, a little nutmeg, and lastly a cup of sour cream; bake in round tins in a rather quick oven; fruit may be added if desired; frost while the cake is warm; it will keep some time.

SPONGE CAKE PUDDING.—Melt some butter and rub with it the mould in which the pudding is to be made; sift on the butter some powdered sugar; see that all parts of the mould are covered with it so as to look white; stone some raisins and currents, and put according to fancy in the mould. Take some sponge cake, the staler the better, cut it up into small pieces, and fill the mould lightly with it, mixing through it currants and raisins well rubbed in flour. Beat separately the whites and yolks of four eggs, mixing with the yolks about four tablespoonfuls of sugar; pour on them one and a half pint of cold milk, and pour this over the sponge cake in the custard; set the mould in a saucepan of cold water; let the water cover one-third of the mould, and place it over the fire; when the water begins to boil, set it where it will cook slowly, or it will turn. When nearly done, put it in the oven. It will bake in twenty minutes. Turn the pudding

into a dish and pour around it rich sweetened cream flavored with lemon, rosewater, bitter almonds, or anything else preferred.

SCOTCH CAKE.—Take a pound of sugar, and three-quarters of a pound of butter; stir it to a cream; put in the juice and grated rind of a lemon, and a wine-glass of brandy. Separate the whites and yolks of nine eggs, beat them to a froth, and stir them into the cake, then add a pound of sifted flour, and just before it is put into the oven add a pound of seeded raisins well rolled in flour. Bake in one loaf one and a half hours.

TO BAKE A HAM.—A young and fresh ham eats much better baked than boiled, and keeps longer good. Place it into plenty of cold water to soak over night. The next morning place it in warm water for an hour or two, wash it very clean, trim smoothly off all rusty parts, and lay it with the rind downward into a coarse paste rolled to about an inch in thickness; moisten the edges, draw, pinch them together, and fold them over on the upper side of the ham, taking care to close them so that no gravy can escape. Send it to a well heated but not too hot oven. Bake from three to five hours, according to the size of the ham. Remove the crust and skin while hot. When part only of a ham is cooked, baking is far preferable, as it retains the juices better.

The Air we Breathe at Night.

We have all heard of the Black Hole at Calcutta. It was a room eighteen feet square. In this room one hundred and forty-six persons were confined. It had but one window, and that a small one. Dr. Dunglison, in his "Elements of Hygiene," says: "In less than an hour many of the prisoners were attacked with extreme difficulty of breathing; several were delirious, and the place was filled with incoherent ravings, in which the cry for water was predominant. This was handed to them by the sentinels, but without the effect of allaying their thirst. In less than four hours many were suffocated or died in delirium. In five hours the survivors, except those at the gate, were frantic and outrageous. At length most of them became insensible. Eleven hours after they were imprisoned, twenty-three only of the one hundred and forty-six came out alive, and these were in a highly putrid fever."

There are many "black holes" like this used for sleeping-rooms; the difference between them and the one at Calcutta is that they are not crammed quite so full of human beings. In a word, then, we may say a sleeping apartment should be large, lofty and airy. It is a poor-economy for health to have large and spacious parlors, and small, ill-ventilated bedrooms. Fashion, however, is a reigning deity in this respect, and will, no doubt, continue to bear sway, notwithstanding our protest against her dominion.

You will scarcely drink after another person from the same glass, yet you will breathe over and over the same air, charged with the filth and poison of a hundred human bodies around

you. You cannot bear to touch a dead body because it is so polluting; but you can take right into your lungs, and consequently into your body, your system, those poisonous particles and noxious exhalations which the bodies around you have refused, and which have been cast into the atmosphere by their lungs, because the health of their bodies required them to be thrown off.

If the "timorously nice creatures who can scarcely set a foot on the ground," who are so delicate that they run distracted at the crawling of a worm, flying of a bat, or squeaking of a mouse, could see what they breathe at the midnight carousal, the very polite ball, and bright theater, they would never be caught in such company again. Nay, if they could see what they breathe in their own dwellings, after the doors and windows had been closed a little while, they would soon keep open houses. More sickness is caused by vitiated air than can be named. It is one of the most prominent causes of scrofula, which is but another name for half the diseases that attack the human body. It vitiates and destroys the whole fountain of life—the blood.

In the sick room it often augments the disease, or renders it incurable. If the physician comes in and opens a window, or a door stands ajar for a moment, the good nurse, or the tender mother, or the kind wife, or the loving sister, will fly up and close it as though the life of the sick were at stake. All this is well-meant kindness, but really cruel.

If you would have health, breathe fresh air; open your windows every morning, and often during the day; leave off your mufflers from the chin. Let the air into your bed-rooms; you cannot have too much of it, provided it does not blow directly upon you.—*Exchange.*

Hints on Diet.

Most chronic diseases, and many acute ones, are produced at the table. As a rule, no fluid of any kind should be taken at the table, especially if the stomach is weak. The stomach should never be overloaded; not more than two or three articles should be taken at one meal; no stimulants used before eating; tobacco arrests digestion. Milk is the best diet for infants and children. Tomatoes with cream and sugar are healthy and nutritious. Bread and butter is the staff of life, and easily digested. Too much salt irritates the stomach. Colds are frequently produced by drinking hot tea and exposure afterward. Late suppers induce heart disease. Pastry and cake constipate the bowels. Boiled potatoes are not so healthy as baked ones. Fruits are to be eaten at breakfast and dinner. The stomach requires much rest to be healthy; purgative medicines weaken the bowels. Cheerful conversation promotes digestion, and anger prevents it.

TO REMOVE PROUD FLESH.—Pulverize loaf sugar very fine and apply it to the part affected. This is a new and easy remedy, and is said to remove it entirely without pain.

For the Southern Farm and Home.

Not "Hostile Advice."

MR. EDITOR—Your correspondent, "J. R.," of Baldwin County, Georgia, must be as keensighted as he confesses himself "suspicious," to have discovered so large a cat under the meal of the letter he criticises in your May number. That letter was not written by the owner of a cotton factory in New England, nor did it contain "hostile advice." The writer did not assume to *advise* any body. It was written in South Carolina, during a sojourn of a few months last winter, in that State and in Georgia, for the benefit of the health of the writer. Brought up on a New England farm, his "prejudices" were strongly "antagonistic" to specialties in agriculture. He had read in Southern agricultural publications, arguments which he regarded as conclusive against the expediency of the old-time devotion to the cotton crop; arguments like those, for instance, stated by your correspondent, "John Plow-handle," in the FARM AND HOME for May.

But as the Northern invalid rode or walked about the country, he found that preaching and practice did not agree—that the planter in the field and the writer in the book did not "hitch horses." The "Northern man" found himself among a class of planters whom he could not believe were deficient in judgment, or indifferent to their own interests. But still they raised cotton—great fields and small fields of cotton—and little, very little else. How then were the editorial denunciations of the cotton specialty and the practice of intelligent planters to be reconciled? An attempt to answer this question, resulted in the "long and labored letter" which has been honored by the strictures of your Georgia correspondent. If the ten reasons assigned for the cultivation of cotton, instead of shielding the planters whose acquaintance the writer is proud to have made from the charge of "folly," of "blunders to the teachings of experience," of "shutting their eyes to great economical facts," are to be regarded as "hostile advice," then the writer must claim the privilege of "holding the horses awhile," himself, while others attempt to reconcile the difference between the theory and practice of agriculture at the South.

No objection is made to the manner in which "J. R." alludes to the apologies offered for the course pursued by Southern planters. He is at liberty to give expression to his view of their force or pertinency. But it is unpleasant to witness any manifestation of a feeling which assumes that the interests and prejudices of the people of one section of our country are necessarily antagonistic to those of the people of another section; and that this antagonism is to be found lurking in every thing that either says or does.

S. F.
WINCHESTER, MASS., May 12, 1874.

The Southern Farm and Home.

MEMPHIS, TENN., JUNE, 1873.

WM. M. BROWNE, - *Editor and Proprietor.*
BOYLE & CHAPMAN, - - - *Publishers.*

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Invariably in advance.	

THE CROPS.—The news from the South and Southwest in relation to the crops is very discouraging. The stand of cotton is generally poor and the corn crop looks very unpromising. A planter, writing from Bolivar county, Miss., says:

"We are very backward in our farming. We have just commenced scraping cotton, which is very small, scrubby stuff and full of lice. Corn also looks very unpromising as a general thing—have had to replant. Indeed, the prospect is far from favorable for a crop either of corn or cotton."

An esteemed friend, a prominent planter from Southwestern Georgia, writes:

"We have a very backward season. Wheat is, however, better than for ten years. I expect to reap not less than fifteen bushels per acre on thin but unmanured land. But the birds—oh the birds! I wish they were all made into one big pie, and all the editors had places at the table."

A friend from Baton Rouge, La., writes:

"Cotton has been seriously damaged by the frost, so much so that in many places it has been plowed up and new seed planted. Plant cane is looking tolerably well, but stubble is as poor as it can be."

A subscriber from near New Braunfels, Texas, informs us that:

"The frost played havoc with the corn and cotton and killed all tender garden vegetables. Between frost, hail and locusts, our chances hereabouts are very slim."

Our information from the river counties in Arkansas is more favorable. There we learn that the stand of cotton is good and growing finely, though late, and the corn prospect is very encouraging. The negroes working well and obediently.

REMITTANCES to the SOUTHERN FARM AND HOME, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

WE are under many obligations to our friends R. G. CRAIG & Co., the well-known seedsmen and agents for the sale of all sorts of farm and garden implements, for two beautiful "hanging baskets" filled with the choicest flowers. To those who are condemned to live in cities, and are denied the enjoyment of a flower garden, these baskets are a source of real pleasure.

THE following communication from the pen of Mr. R. J. REDDING, of Ellaville, Ga., member of the Executive Committee of the State Agricultural Society, and a practical planter of high standing, reached us too late for insertion in the part of our Magazine usually devoted to such papers. Sooner than postpone its publication to our next issue we publish it here, being perfectly willing, from what we know of Mr. Redding, to indorse any statement he may make in relation to subjects agricultural:

Rye for Soiling.

MR. EDITOR—I have read, somewhere, that "we of the South, in our search after some Northern or foreign forage and soiling plant, have overlooked some that are just as good, and have the advantage of being well known and acclimated."

I indorse, so far as rye is included in the list. Most farmers do not know how to sow rye for the above purposes. They are willing to "follow directions," *plow deep and harrow finely*, manure liberally and seed heavily, if an experiment is to be made with some plant they never saw. Let rye have the same treatment, and the result will be astonishing.

DIRECTIONS.—Prepare the soil by deeply plowing with ordinary implement. Apply fifty (50) bushels cotton seed, (or its equivalent in some other good manure,) if the land is already good; if not, more. For grazing during winter, sow in September, and *harrow* in smoothly, not less than *two and a half bushels* clean seed per acre. For soiling, manure *very* heavily, and sow along in October and November, not less than *three (3) bushels*. The grazing patch should not be trampled when the earth is wet, and should not be grazed later than first February, if desired to cut. By the middle of March the first sown will do to cut, and you will have an abundant supply of the best of long forage. It should be cut and partially cured before feeding.

I would say that one acre of rich soil, thus prepared and sown in, say three successive sow-

ings, two or three weeks apart, will furnish an abundance of feed for six head of mules and two or three cows, from the 15th March until 15th May.

I have been without any other forage during that time. My rye is now exhausted and my oats and wheat are ready, and in two weeks millet will be plenty.

I insist especially on the heavy seeding. It will cause the straw to be very fine and tender, and every inch will be greedily eaten by stock. Thick seeding also makes it earlier.

That sown in September will head out and cut before Christmas, but I think it is better to keep it back by grazing until near the natural season for heading. All of it may be cut twice, if cut first time before the rye is fully grown.

R. J. REDDING.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the FARM AND HOME and any of those papers at the subjoined reduced rates:

FARM AND HOME and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
FARM AND HOME and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
FARM AND HOME and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
FARM AND HOME and <i>Columbus (Miss.) Democrat</i>	\$3 00
In addition to these we can furnish the FARM AND HOME and any one of the following valuable periodicals at the following prices:	
FARM AND HOME and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
FARM AND HOME and <i>Southern Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Harper's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
FARM AND HOME and <i>Appleton's Journal</i> , per annum.....	\$5 00
FARM AND HOME and <i>Hearth and Home</i> , per annum.....	\$3 50

ALL LETTERS relating to the editorial or business departments of the FARM AND HOME should be plainly addressed to WILLIAM M. BROWN, Memphis, Tenn.

THE STATE FAIR AT HOUSTON, TEXAS.—We learn with pleasure that the Texas State Fair, which was held at Houston during the week ending May 18th, was a very gratifying success, both in the excellence of the display of produce, stock, farm implements, &c., and in the enterprise and public spirit of the large crowds that attended. We were sincerely gratified to learn that the managers of the Houston fair refused to permit faro banks, keno and other gambling concerns to come within the grounds. We hope that the managers of other fairs will follow this excellent example.

S. M. PETTINGILL & Co., 10 State street, Boston, 37 Park Row, New York, and 701 Chestnut street, Philadelphia, are our agents for procuring advertisements for the SOUTHERN FARM AND HOME in the above cities, and authorized to contract for advertising at our lowest rates.

"AN OLD ESTABLISHED FIRM.—The firm of S. M. PETTINGILL & Co., commenced their Advertising Agency in the old Journal building, No. 10 State street, Boston, nearly a quarter of a century ago (February 1849), where their Agency is still located, carrying on a large and successful business. They established a branch in New York City, May 1852, which has grown to be larger than the parent house—increasing steadily, year by year, until now it has the agency of nearly every newspaper in the United States and British Provinces, and does a yearly business of hundreds of thousands of dollars. S. M. Pettingill & Co., have recently opened another branch office at 701 Chestnut street, Philadelphia, where they are doing a successful increasing business. They have done advertising exceeding ten millions of dollars since commencing business. This firm is favorably known not only throughout this country, but in all parts of the world. They have established a reputation for honorable and fair dealing which any firm might envy, and but few have attained to. We congratulate them upon their success. We would recommend all who want advertising done in any part of the country to call upon them. They can point to hundreds of business men who have followed their advice, and trusted to their sagacity, and availed themselves of their facilities, who have made fortunes for themselves, and they are daily assisting others in the same path."—*Boston Journal*, May 8th.

CLUBS.—Those who may feel inclined to extend the circulation of the FARM AND HOME, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

To our Correspondents.

We have received many letters from esteemed correspondents, making inquiries which we are unavoidably compelled to postpone answering until our next. We ask their indulgence.

Literary Department.



EDITOR'S BOOK TABLE.

KENELM CHILLINGLY: HIS ADVENTURES AND OPINIONS. By E. L. Bulwer, Lord Lytton. (Harper & Brothers.) If the author of this book had been "one John Smith," and not the versatile novelist who wrote "Paul Clifford" and "Eugene Aram," "The Caxtons," and "What Will he Do With It?" we think the world would pronounce "Kenelm Chillingly" a decidedly uninteresting work, and would advise Smith to turn his attention to something in which he could do better than in novel writing. But as there is no doubt Bulwer wrote it, and as it comes to us in a posthumous shape, everybody reads it, and most people pronounce it to be "very fine," just as we have heard gaping tourists go into ecstasies at sight of Raphael's frescoes in the Vatican, of which they were unable to distinguish the outline. "Lytton Bulwer scripsit" and "Rafello pinxit" constitute a stamp of excellence which the profane public do not dare to question. It is hardly possible to imagine a more disagreeable *prig* than the aforesaid Kenelm Chillingly. Wherever he appears he bores you to death with his philosophy, which is a curious admixture of idealism and materialism, and both equally false, the only relief being an occasional display of a Quixotic chivalry, such as his boxing match with Tom Bowles, and his friendship for Will Somers. Were it not for this we do not see how anybody, with only the usual stock of patience, could voluntarily submit to the infliction of Chillingly's dreamy misanthropy, his contempt for woman, and his final head-over-heels fall in love with Lily. Fortunately for humanity, at least for that portion of

it which constitutes society, Kenelm Chillingly is an impossible character. The plot of the book is very weak, and the characters, especially the female characters, wholly uninteresting. Now and then there are flashes of Bulwer's genius which illumine the darkness for a moment, but on the whole, we repeat, had John Smith been the author, Kenelm Chillingly would be generally called a dull book.

FARM BALLADS. By Will Carleton. (Harper & Brothers.) The popular verdict upon most of the poems which compose this volume has been pronounced as they appeared from time to time in the columns of the periodical press. That verdict has been one of emphatic approval, and justly so. The scenes, people and incidents which Carleton has delineated are essentially homely, but though his descriptions are often rough they are never gross, and they are totally free from the coarse profanity which blots the pages of other modern writers of merit whom we could name, and who commit the grievous error of supposing that rough people must necessarily be profane or blasphemous. Carleton is eminently true to nature, and his pathos and humor are so closely blended as to be inseparable. "Farm Ballads," in our opinion, fully entitle their author to a place among true poets, and if he lives, that place will be in the front rank.

The book is beautifully illustrated, and very tastefully printed and bound.

THE ANNUAL RECORD OF SCIENCE AND INDUSTRY FOR 1872. (Harper & Brothers.) We commended the first of this valuable series of scientific year-books when it appeared a year ago, as the best and most complete of all the works of its kind that we had seen. The second volume is fully equal to the first. It is edited by the careful and able hand of Professor Baird, of the Smithsonian Institute, who has access not only to the rich sources of information in the Library of the Smithsonian, but to all the scientific periodicals of the New and Old worlds. The index to the work is admirably executed.

OLD KENSINGTON. A Novel, by Miss Thackeray. Illustrated. (Harper & Brothers.) To those whose business it is to read the "novels of the period," "Old Kensington" will cause a delightful feeling of relief. It is a simple love story, simply told without sensationalism, passion in tatters, or tragic effects, but full of delicate pathos and genuine feeling. Compared with the general run of the popular

romances this will appear tame and common place; but to us it is charming, because it seems to reflect the tender, womanly thoughts and emotions of its author.

SANTO DOMINGO, PAST AND PRESENT; WITH A GLANCE AT HAYTI. By Samuel Hazard. Crown, 8 vo., pp. 511. (Harper & Brothers.) This is a very interesting and valuable work, and its publication is opportune. Gen. Grant's proposition to annex St. Domingo to the United States, and the scheme of the Samana Bay Company have created an interest in that country which was not felt before, and make Mr. Hazard's well written and comprehensive account of the country under Dominican rule, exceedingly interesting. He tells all that one wants to know, and tells it entertainingly, and after reading all that the book contains, the impression left on the mind is, that however beautiful the Island may be naturally, and however rich its undeveloped resources, its acquisition with its worse than savage population, would be a curse. The work is embellished with a number of good illustrations and maps, and contains a vast amount of valuable statistical information.

LITTLE KATE KIRBY. A Novel, by F. W. Robinson. (Harper & Brothers.) This is a very ably conceived and well told story, in which the characters are powerfully drawn, and the incidents are exciting and dramatic, though always probable. It is essentially original in its plot and in the manner in which it is unfolded, and there is a consistency in all its parts which raises it very far above the level of ordinary novels. Mr. Robinson's works always have merit and are readable, and this is one of the best, if not the best he has written.

MISS BEECHER'S HOUSEKEEPER AND HEALTH-KEEPER. 12mo., pp. 482. Illustrated. (Harper & Brothers.) Miss Beecher evidently knows thoroughly what she writes about. She seems to have carefully studied the various subjects of which she treats, and her practical advice and information on all matters relating to the comfort and health of a family, are both interesting and instructive. Her range of subjects is very extensive. Nothing which even remotely relates to the feeding, health or comfort of a household is omitted.

TURNING POINTS IN LIFE. By the Rev. Frederick Arnold, B. A., of Christ Church, Oxford. (Harper & Brothers.) The intention of the reverend author of this book was vastly better than its execution. The influence of

previously acquired habits upon a man's career, and consequently the importance of good habits, are very generally admitted, and do not need an essay to enforce so obvious a truism. And really, this, with some hints on the choice of a university, a profession, on marriage, &c., with a few anecdotes by way of illustration, constitute the entire book. In the concluding pages, however, Mr. Arnold, without seeming to be aware of it, explodes his own sensible and generally admitted doctrine when he declares that a man's choice of what course to pursue, "apparently arbitrary, was most probably led up irresistibly by antecedent events to a foregone conclusion." If this be so, what is the use of talking about "turning points in life?"

THE PARTING WORDS OF ADOLPHE MONOD TO HIS FRIENDS AND THE CHURCH. 12mo., pp. 205. (D. Appleton & Co.) Adolphe Monod was a French Protestant preacher, famed for his evangelical piety, simplicity of character and touching eloquence. During a long and lingering illness which compelled him to abandon his pulpit, he assembled his family and as many of his flock as his sick-room could hold on every Sabbath till he died, and from his deathbed addressed to this congregation the beautiful sermons which this volume contains. Suggested as many of them were by his own experience, composed and delivered during acute bodily suffering, they are sublime lessons of Christian duty under the severest trials and afflictions. We have read them with deep interest and have found edification and comfort in their every line. We commend them to all who want to learn how a Christian can employ his suffering for the glory of God.

REPTILES AND BIRDS. A Popular Account of their Various Orders. By Louis Figuier. 12mo., pp. 624. (D. Appleton & Co.) This is an excellent translation from the French of Figuier's valuable work in which instruction and amusement are so happily blended. The illustrations, of which there are 307, are well executed, and printing, paper and binding are first-class. The student of natural history will find this volume a very useful introduction to the more elaborate and more abstruse works of other authors, and the casual reader will find it full of entertaining information.

HARPER'S MAGAZINE for June, beginning the forty-seventh volume, contains the conclusion of "Old Kensington," by Miss Thackeray, and of "The New Magdalen," by Wilkie

Collins. Charles Reade's fascinating story, "A Simpleton," will still be continued. The June number contains sixty-seven illustrations. The illustrated papers cover an extensive variety of topics. In "Cheap Yachting" a graphic description by pen and pencil is given of a yachting tour in Buzzard's Bay. Mr. Lossing contributes an interesting paper illustrated by rare pictures from the celebrated Lord Rawdon collection of sketches made a century ago, and relating to Revolutionary scenes and incidents in the neighborhood of Boston and of New York. A beautifully illustrated article on "The Wine Islands of Lake Erie," among other things tells the thrilling story of Lieut. John Y. Beall's privateering expedition. Henry Blackburn, formerly editor of *London Society*, contributes an entertaining description of a tour in the Harz Mountains, the "Toy Country of North Germany," with twenty-nine characteristic illustrations. Charles Nordhoff exposes the evils of our present system of prison management, and in answer to the question, "What shall we do with Scroggs?" suggests making a penal settlement of Alaska. Another entertaining installment is given of "Recollections of an Old Stager." Miss Hudson contributes an illustrated poem, "To-Morrow," a thrilling story in verse. Poems are also contributed by Bayard Taylor, William C. Richards, and Carl Spencer. Two short stories, of great power and interest, are given, by Harriet Prescott Spofford and the late Miss Caroline Cheesebro. The Five Editorial Departments, occupying thirty-five pages of the Magazine, are unusually comprehensive and interesting.

The June number of the *ECLECTIC* is full of interest and instruction. Mr. St. George Mivart's paper on "Man and Apes" is very well written, and upsets many of the Darwin theories. The articles on "Primitive Society," "Notions about the Moon," "The Story of the Death of Earl Stafford," "Notes on Ghosts and Goblins," "The Queen of Letter Writers," are all eminently readable. This number contains a fine steel engraving of Taine, together with a well written outline sketch of his life.

That was a beautiful idea in the mind of a little girl who, on beholding a rosebush, on the topmost stem of which a rose was fading, whilst below and around it three beautiful crimson buds were just unfolding their charms, at once, and earnestly exclaimed to her brother: "See, William, these little buds have awakened in time to kiss their mother before she dies."

Clothing on Fire.

The frequent terrible deaths from clothes taking fire should lead all persons to remember the following method of extinguishing such fires, as given by the *Scientific American*:

"Three persons out of four would rush right up to the burning individual and begin to paw with their hands without any definite aim. It is useless to tell the victim to do this or that, or call for water. In fact, it is generally best not to say a word, but seize a blanket from the bed, or any woolen fabric—if none is at hand, take any woolen material—hold the corners as far apart as you can, stretch out higher than your head, and running boldly to the person, make a motion of clasping in the arms, mostly about the shoulders. This instantly smothers the fire and saves the face. The next instant throw the person on the floor. This is an additional safety to the face and breath, and any remnant of flame can be put out more leisurely. The next instant immerse the burnt part in cold water, and all pain will cease with the rapidity of lightning. Next get some common flour, remove from the water, and cover the burnt parts with an inch of thickness of flour; if possible, put the patient to bed, and do all that is possible to soothe until the physician arrives. Let the flour remain until it falls off itself, when a beautiful new skin can be found. Unless the burns are deep no other application is needed. The dry flour for burns is the most admirable remedy ever proposed, and the information ought to be imparted to all. The principle of its action is, that, like water, it causes instant and perfect relief from pain by totally excluding all the air from the injured parts."

AGRICULTURAL PAPERS ALWAYS PAY.—

In an experience of publishing an agricultural paper about twenty years, we have never heard of a man who was a subscriber, say at the end of the year that he had not got the worth of his money. Nor did we ever hear of any subscriber to any good, reliable, agricultural publication, complain that he had not been paid for the trifling cost of it. Mr. Clark Bell, in his address before the Steuben Co., N. Y., Agricultural Society, said:

"The farmer should, of all other men, take a good, reliable, agricultural paper. I defy any farmer to try it for a year and then be able to say it has not paid and been in every way for his good."—*Rural American*.

Mr. Joseph Harris expresses the opinion that indigestion is the source of nearly all ordinary complaints in horses, and that this is brought on by irregular feeding and watering; by exposure, fatigue, by long journeys without food, in a storm, and then by overfeeding and neglecting to rub them dry before leaving them for the night.

Insurance Department.

From the Underwriter.

State Insurance Legislation a Nuisance.

Legislation, as applied to insurance business, is fast becoming a nuisance. From all parts of the country we hear nothing but attempts to define by statute the duties of life companies to the public and the State, without at all considering that these companies, not being citizens, are merely private corporations, doing business with the people on terms mutually agreed upon between the contracting parties, and not properly coming within the sphere of legislative intermeddling.

New York leads the way, as usual, in this insatiate warfare on the money-bags of our life institutions. We are so accustomed to this sort of thing from Albany, that when the model Legislature of the Empire State assembles to hold solemn conclave, we feel that the companies may as well hold themselves in readiness for a demand on their exchequer. The paltry consideration of three dollars per diem is altogether too insignificant to supply members with the luxuries supplied at the Delavan House, and such extras as "draw-poker," and other harmless pastimes; so either railroad or insurance companies have to be bled. The former, however, having the traveling public at their mercy, are not so liable to be victimized as the insurance companies, and the hungry legislators accordingly "go" for the latter in the most improved fashion.

Other States could be referred to by name, in which the companies are made to pay well for the privilege of doing good, and, taken as a whole, the business of State insurance legislation is fast becoming so great a nuisance that something must be done to put a check upon a great and growing evil.

It is customary, on the part of the press, to notice either favorably or otherwise the annual reports of our numerous State Insurance Superintendents. From this it may be inferred that the press, particularly the insurance press, is imbued with a high opinion of the usefulness of the existing system of State supervision. This, we believe, we may with truth say is true only in a limited sense. In the absence of a better system of supervision, we are glad to accept the present one, and it is but right to give State Superintendents the proper credit for doing the best they can to make insurance statutes practically useful; but the system is fast proving itself burdensome and useless, and is coming to be regarded by the public as practically worthless. How it is regarded by the companies need not be told, when the labor of preparing annual statements for thirty or thirty-five different States is taken into consideration. The benefits accruing from it are exaggerated by those in favor of some check on those soulless corporations; but it must be acknowledged that whatever benefits are really derivable from it, are

more than counterbalanced by the vexatious exactions of a horde of Superintendents, and the injustice perpetrated from time to time by ignorant, unscrupulous and rapacious Legislatures.

Nor has the system won much admiration outside the United States. In England the partial legislative inquisition established there met with very determined opposition so long as its defeat had a possibility of accomplishment, and its operation is not regarded as being a very decided success. In Canada, where efforts are being made to introduce insurance legislation which will apply equally to all the provinces, the American system is not regarded in a very favorable light. A late issue of the *Toronto Monetary Times* has the following on this subject, which is not complimentary to State supervision or to State Superintendents:

"In the United States, the different State departments, exercising a supervision over insurance matters, levying their taxes and imposts, making endless inquiries into their affairs, saddling them with burdens grievous to be borne, have operated as a millstone about the necks of the companies. A swarm of commissioners has been created. Some of them are men of little conscience and scant principles; ready for a bribe, or always anxious to display their authority. Their extreme officiousness, meddlesomeness, and expensiveness have brought reproach and a large measure of contempt on a system inherently meritorious, well devised, and adapted to serve a most useful purpose."

Our own experience confirms this view; and while it is inexpedient to abolish governmental supervision in some shape, the sooner the companies are relieved from the predatory influence of hungry State Legislatures the better. The only escape from it that we can see is the establishment of some general system of supervision which would apply equally to all the States, and which would secure to the public all the advantages claimed for the present system without its drawbacks. We are aware that some of our cotemporaries go in for the total abolition of all State or government interference in insurance matters, but we do not believe that the complete removal of official control of insurance operations, and enforcement of a proper regard for well understood principles of prudence and safety, would be at all advisable. One of the first fruits of such a step would be a return to a "wild-cat" regime, or, at best, the business might prosper or otherwise, according to the ability shown in the management. The compulsory maintenance of the proper reserve or reinsurance fund intact is the only really good feature about State supervision as practiced at present. This requirement could not with safety be dispensed with; but with the power to pass absurd and iniquitous laws vested in and willingly exercised by the State Legislatures, it becomes a question whether the benefit to be derived from this one feature is not more than neutralized by the evil of State insurance legislation, and the power it gives to unprincipled legislators to harass and oppress the companies.

Poetry.

From the June Atlantic.

By the Shore of the River.

Through the gray willows the black winds are blowing
Here on the shore, with its driftwood and sands;
Over the river the lilies are growing,
Bathed in the sunshine of Orient lands;
Over the river, the wide, dark river,
Spring-time and summer are blooming forever.

Here, all alone on the rocks, I am sitting,
Sitting and waiting—my comrades all gone—
Shadows of mystery drearily flitting
Over the surf with its sorrowful moan;
Over the river, the strange, cold river,
Ah! must I wait for the boatman forever?

Wife and children and friends were around me,
Labor and rest were as wings to my soul;
Honor and love were the laurels that crowned me,
Little I recked how the dark waters roll;
But the deep river, the gray misty river,
All that I lived for has taken forever!

Silently came a black boat o'er the billows;
Stealthily grated the keel on the sand;
Rustling footsteps were heard through the willows,
There the dark boatman stood, waving his hand:
Whisp'ring, "I come, o'er the shadowy river—
She who is dearest must leave thee forever!"

Suns that were brightest, and skies that were bluest,
Darkened and paled in the message he bore;
Year after year went the fondest, the truest,
Following the beckoning hand to the shore;
Down to the river, the cold, grim river,
Over whose waters they vanished forever.

Yet not in visions of grief have I wandered,
Still have I toiled, though my ardors have flown;
Labor is manhood; and life is but squandered,
Dreaming vague dreams of the future alone;
Yet from the tides of the mystical river,
Voices of spirits are whispering ever.

Lonely and old, in the dusk I am waiting,
Till the dark boatman, with soft muffled oar,
Glides o'er the waves, and I hear the keel grating,
See the dim beckoning hand on the shore,
Wafting me over the welcoming river
To gardens and homes that are shining forever!

The Captain of the Northfleet.

So often is the proud deed done
By men like this at duty's call;
So many are the honors won
By them, we cannot wear them all.

They make the heroic commonplace,
And dying thus the natural way;
Yet is our world-wide English race
Ennobled by that death, to-day!

It brings the thoughts that fathom things
To anchor fast where billows roll;
It stirs us with a sense of wings
That strive to lift the earthiest soul.

Love was so new, and life so sweet,
But at the call he left the wine
And sprang full-statured to his feet,
Responsive to the touch divine.

"Nay, dear, I cannot see you die.
For me, I have my work to do
Up here. Down to the boat. Good-by,
God bless you. I shall see it through."

We read, until the vision dims
And drowns; but ere the pang be past,
A tide of triumph overbrims
And breaks with light from heaven at last.

Thro' all the blackness of that night
A glory streams from out the gloom;
His steadfast spirits holds the light
That shines till night is overcome.

The sea will do its worst, and life
Be sobbed out in a bubbling breath;
But firmly in the coward strife
There stands a man who vanquished death!

A soul that conquers wind and wave,
And towers above a sinking deck;
A bridge across the gaping grave;
A rainbow rising o'er the wreck.

He saved others; saved the name
Unstained that he gave his wife;
And dying with so pure an aim,
He had no need to save his life.

Lord! how they shame the life we live,
These sailors of our sea-girt isle,
Who cheerily take what Thou mayest give,
And go down with a heavenward smile!

The men who sow their lives to yield
A glorious crop in lives to be;
Who turn to England's harvest field,
The unfruitful furrows of the sea.

With such a breed of men so brave,
The Old Land has not had her day;
But long, her strength, with crested wave,
Shall ride the seas, the proud old way.

—Gerald Massey.

JOHN GRANGER.

A GHOST STORY.

By the Author of "*Lady Audley's Secret*," &c.

[CONTINUED.]

They had been sitting at the tea-table nearly half an hour, when the sunny window was suddenly darkened by the apparition of Mr. Stephen Price, looking in upon them in an easy, familiar manner, with his folded arms upon the sill.

"Good evening, Uncle Lorton," he said. "Good evening, Susy. How do, Granger? I didn't know there was going to be a tea-party, or I should n't have come."

"It is n't a tea-party, answered Susan; it is only John Granger, who has come to bid us good-bye, and we are very, very sorry he is going away."

"Oh! we are, are we?" said the lawyer's clerk, with a sneer; "what would Bob Ashley say to that, I wonder?"

"Come in, Steph, and do n't be a fool," growled the old man.

Mr. Price came in and took his seat at the tea-table. He was flashily dressed, wore his hair long, and had a good deal of whisker, which he was perpetually caressing with a hand of doubtful cleanliness, whereon inky evidence of his day's work was very visible.

He did not care much for such womanish refreshment as tea, which he denounced in a sweeping manner as "cat-lap," but he took a cup from his cousin, nevertheless, and joined freely in the conversation while he drank it.

He asked John Granger a good many questions about his plans—whether he meant to buy land, and when, and where, and a great deal more in the same way—to all of which John replied as shortly as was consistent with the coldest civility.

"You take all your capital with you," of course?" asked Stephen Price.

"No, I take none of my capital with me."

"Why, hang it all, man, you must take some money!"

"I take the money I received for my furniture and stock."

"Ah! to be sure; you came to the office yesterday afternoon to receive it. Over £600, was n't it? I drew up the agreement between you and the new man; so I ought to know."

"It was over £600."

"And you take that with you? Quite enough to start with, of course. And the rest of your money is safe enough in old Lawler's bank. No fear of any smash there. I wish I was going with you, Granger; I'm heartily sick of Hillborough. I shall cut old Vollair's office before very long, come what may. I can't stand it much longer. I've got a friend on the lookout for a berth for me up in London, and directly I hear of anything, I shall turn my back upon this slow old hole."

"You'll have to pay your debts before you do that, I should think, Steph," the farmer remarked bluntly.

Stephen Price shrugged his shoulders, and pushed his tea-cup away with a listless air. He

got up presently and lounged out of the house, after a brief good evening to all. He made no attempt to take leave of John Granger, and seemed in his careless way to have forgotten that he was parting with him for the last time. No one tried to detain him; they seemed to breathe more freely when he was gone.

John and Susan wandered out into the garden after tea, while the farmer smoked his pipe by the open window. The sun was very low by this time, and the western sky flooded with rosy light. The garden was all abloom with roses and honeysuckle. John Granger fancied he should never look upon such flowers or such a garden again.

They walked up and down the little path once or twice almost in silence, and then Susan began to tell him how much she regretted his departure.

"I do n't know how it is, John," she said, "but I feel to-night as if I would give all the world to keep you here. I cannot tell you how sorry I am you are going. O, John, I wish with all my heart I could have been what you asked me to be. I wish I could have put aside all thoughts of Robert."

"Could you have done that, Susan?" he cried, with sudden energy.

His fate trembled upon a breath in that moment. A word from Susan and he would have stayed; a word from her and he would never have taken the path across the common and through the wood to Hillborough on that bright summer evening. He was her valued friend of many years; dearer to her than she had known until that moment. It seemed to her all at once that she had thrown away the gold, and had chosen—not dross, but something less precious than that unalloyed gold.

"I have promised Robert to be his wife," she said; "but O, John, I wish you were not going away."

"My dear love, I could not trust myself to stay here; I love you too much for that. But I will come back when I am a sober, elderly man, and ask for a corner beside your hearth."

"Promise me that. And you will write to me from America, won't you, John?" I shall be so anxious, and father, too, to know that you are safe and well."

"Yes, my dear, I will write."

"What is the name of the steamer you are to go in?"

"The *Washington*, and bound for New York."

"I shall not forget that—the *Washington*."

John Granger looked at his watch. The sun had gone down, and there was a long line of crimson yonder in the west above the edge of the brown furse-grown common. Beyond it the wood dipped down, and the tops of the trees made a black line against that red light. Above, the sky was of one pale, tender green, with stars faintly shining here and there.

"What a lovely night!" said Susan.

John Granger sighed as he looked at that peaceful landscape.

"I did not know how much I loved it," he said. "Good-night, Susy; good night, and good-bye."

"Won't you kiss me the last time, John?" she said, shyly.

She scarcely knew what she had asked. He took her up in his arms, strained her to his breast, and pressed one passionate, despairing kiss upon her brow. It was the first and last in his life.

"Time's up, Susy," he said, gently releasing her.

He went to the window, shook hands with the farmer, and took leave of him in that quiet, undemonstrative way which means a good deal with some people. A minute more, and he was gone.

Susan stood at the garden-gate, watching the tall, dark figure crossing the common. Twice he turned and waved his hand to her—the last time upon the edge of the wood. That still, twilight hour seldom came after that night without bringing the thought of him to Susan Lorton.

It seemed to grow dark, all at once, when he was gone, and the house had a dreary look to Susan when she went back to it. What was it that made her shiver as she crossed the threshold? Something—some nameless, shapeless fancy shook her with a sudden fear. Her father had strolled out to the garden through the wide-open back-door. The house seemed quite empty, and the faint sound of the summer wind sighing in the parlor chimney was like the lamentation of a human creature in pain.

CHAPTER III.

The summer passed, and in the late autumn came Susan's wedding day. She was very fond of her good-looking, generous-hearted young suitor, and yet, even on the eve of her marriage her heart had turned a little regretfully toward absent John Granger. She was not a coquette to glory in the mischief her beauty had done. It seemed to her a terrible thing that a good man should have been driven from his home for love of her.

She had thought of him a great deal since that summer night upon which he had looked back at her on the verge of Hawley Wood—all the more because no letter had come from him yet, and she was beginning to be a little anxious about his safety. She thought of him still more by and by, as the winter months passed without bringing the promised letter. Her husband made light of her fears, telling her that John Granger would find plenty to do in a new country, without wasting his time in scribbling letters to old friends. But this did not convince Susan.

"He promised to write, Robert," she said; "and John Granger is not the man to break his promise."

Susan was very happy in her new home, and Robert Ashley declared he had the handiest, brightest and most industrious wife in all Northlandshire, to say nothing of her being the prettiest. She had been used to keeping her father's house since her early girlhood, and her matronly duties came very easy to her. The snug little farm-house, with its neat furniture and fresh dimity draperies, was the prettiest thing possible in the way of rustic interiors, the

Dutch-tiled dairy was like a temple dedicated to some pastoral divinity, and Susan took a natural womanly pride in this bright home. She had come from as good a house; but then this was quite her own, and young Robert Ashley was a more romantic figure in the foreground of the picture than her good humdrum old father.

Stephen Price had not stayed at Hillborough long enough to see his cousin's wedding. He had left Mr. Vollair's employment about three weeks after John Granger's departure, and had left without giving his employer any notice of his intention.

He had gone away from Hillborough as deeply in debt as it was practicable for a young man in his position to be, and the tradesmen to whom he owed money were loud in their complaints about him.

He was known to have gone to London, and there was some attempt made to discover his whereabouts. But in that vast area it was no easy thing to find an obscure lawyer's clerk, and nothing resulted from the endeavors of his angry creditors. No one, except those to whom he owed money, cared what had become of him. He had been considered pleasant company in a tavern parlor, and his manners and dress had been copied by aspiring clerks and apprentices in Hillborough; but he had never been known to do any one a kindness, and his disappearance left no empty place in any heart.

The New Year came, and still there was no letter from John Granger. But early in January Robert Ashley came home from Hillborough market one afternoon, and told his wife she need not worry herself about her old friend any longer.

"John Granger's safe enough, my lass," he said. "I was talking to Simmons, the cashier at Lawler's bank, this morning, and he told me that Granger wrote to them for a thousand pounds last November from New York, and he has written for five hundred more since. He is buying land somewhere—I forget the name of the place—and he's well and hearty, Simmons tells me."

Susan clapped her hands joyfully.

"O, Robert, how glad I am!" she cried. "It is n't kind of John to have forgotten his promise, but I do n't care about that as long as he's safe."

"I do n't know why you should ever take it into your head that there was anything amiss with him," said Robert Ashley, who did not regard John Granger's exile from a sentimental point of view.

"Well I'm afraid I'm rather fanciful, Bob; but I could never explain to you what a strange feeling came over me the night John Granger went away from Hillborough. It was after I had said good-bye to him, and had gone back into the house, where all was dark and quiet. I sat in the parlor thinking of him, and it seemed as if a voice was saying in my ear, that neither I, nor any one that cared for him, would ever see John Granger again. There was n't any such voice, of course, you know, Robert, but it seemed like that in my

mind; and whenever I've thought of poor John Granger since that time, it has seemed to me like thinking of the dead. Often and often I've said to myself, 'Why Susan, you foolish thing, you ought to know that he's safe enough out in America. Ill news travels fast; and if there'd been anything wrong, we should have heard of it somehow.' But, reason with myself as I would, I have never been able to feel comfortable about him; and thank God for your good news, Robert, and thank you for bringing it to me."

She raised herself on tiptoe to kiss her husband, who looked down at her in a fond protecting way from the height of his own wisdom.

"Why, Susy, what a timid, nervous little puss you are!" he said, "I should have been getting jealous of John Granger by this time, if I'd known you thought so much of him."

The winter days lengthened, and melted into early spring. It was bright March weather, and Susan had an hour of daylight after tea for her needle-work, while Robert attended to his evening duties out of doors. They had fires still, though the days were very mild; and Susan used to sit at the open window, with a jug of primroses on the wide wooden ledge before her, executing some dainty little repairs upon her husband's shirts.

One evening Robert Ashley was out later than usual, and when it had grown too dark for her to work any longer, Susan sat with her hands lying idle in her lap, thinking—thinking of her wedded life, and the years that had gone before it—years that she could never recall without the image of John Granger, who had been in a manner mixed up with all her girlish days. It had been very unkind of him not to write. It seemed as if his love for her could not have been very much after all, or he would have been pleased to comply with her request. She could not quite forgive him for his neglect, glad as she was to know that he was safe.

The room was rather a large one; an old-fashioned room, with a low ceiling crossed by heavy beams; half parlor, half kitchen, with a wide open fireplace at one end, on which the logs had burnt to a dullish red just now, only brightening up with a faint flash of light now and then. The old chintz-covered arm-chair, in which Robert Ashley was wont to smoke his evening pipe, stood by the hearth ready for him.

Susan had been sitting with her face toward the open window, looking absently out at the garden, where daffodils and early primroses glimmered through the dusk. It was only the striking of the eight-day clock in the corner that roused her from her reverie. She stooped to pick up her work, which had fallen to the ground. She was standing folding this in a leisurely way, when she looked toward the fireplace, and gave a little start at seeing that her husband's arm-chair was no longer empty.

"Why, Robert," she cried, "how quietly you must have come into the place! I never heard you."

There was no answer, and her voice sounded strange to her in the empty room.

"Robert!" she repeated a little louder; but the figure in the chair neither answered nor stirred.

Then a sudden fright seized her, and she knew that it was not her husband. The room was almost dark; it was quite impossible that she could see the face of that dark figure seated in the arm-chair, with the shoulders bent a little over the fire. Yet she knew as well as ever she had known anything in her life, that it was not Robert Ashley.

She went slowly over toward the fire-place, and stood within a few paces of that strange figure. A little flash of light shot up from the smoldering logs, and shone for an instant on the face.

It was John Granger!

Susan Ashly tried to speak to him, but the words would not come. And yet it was hardly so appalling a thing to see him there that she need have felt what she did. England is not so far from America that a man may not cross the sea and drop in on his friends unexpectedly.

The logs fell together with a crashing noise, and broke into a ruddy flame, lighting up the whole room. The chair was empty.

Susan uttered a loud cry, and almost at the same moment Robert Ashley came in at the door.

"Why, Susy!" he exclaimed, "what's amiss, lass!"

She ran over to him and took shelter in his arms, and then told him how she had seen John Granger's ghost.

Robert laughed her to scorn.

"Why, my pet, what fancies will you be having next? Granger is safe enough over in Yankee land. It was some shadow that took the shape of your old friend, to your fancy. It's easy enough to fancy such a thing, when your mind's full of any one."

"There's no use in saying that, Robert," Susan answered resolutely. "It was no fancy; John Granger is dead, and I have seen his ghost."

"He was n't dead on the tenth of last December, anyhow. They had a letter from him at Lawler's bank, dated that day. Simmons told me so."

Susan shook her head mournfully.

"I've a feeling that he never got to America alive, Robert," she said. "I can't explain how it is, but I've a feeling that it was so."

"Dead men don't write letters, Susy, or send for their money out of the bank."

"Some one else might write the letters."

"Nonsense, lass; they know John Granger's handwriting and signature well enough at the bank, depend upon it. It would be no easy matter to deceive them. But I'll look in upon Simmons to-morrow. He and I are uncommonly friendly, you know, and there's nothing he would n't do to oblige me in a reasonable way. I'll ask him if there have been any more letters from Granger, and get him to give me the address."

[TO BE CONTINUED.]

VOL. IV. No. 9.



THE
SOUTHERN

FARM AND HOME



JULY, 1873.

W. M. BROWNE, EDITOR.

PUBLISHED BY

BOYLE & CHAPMAN,

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TENN.



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HALE'S EARLY PEACH.

SOUTHERN FARM AND HOME:

A MAGAZINE OF

AGRICULTURE, MANUFACTURES AND DOMESTIC ECONOMY.

VOL. IV.

MEMPHIS, TENN., JULY, 1873.

No. 9.



Farm Work for the Month.

In a short time the work of crop-making, so far as corn and cotton are concerned, will be at an end for this season. But before that time expires let every effort be made to lay by the crop as clean as possible. Let not a weed or a single blade of grass be left to rob the corn or the cotton plants of one particle of the nutriment which properly belongs to them. The work is very heavy, but better throw out a part of the crop and cultivate the rest well. Those who attend to this most closely will certainly come out best at the crib and the gin-house in in the fall. The seasons have not been as favorable as we might have wished, but we can make up for this in a great measure by increased diligence and closer attention. We are far too apt to attribute the consequences of our own short comings to the seasons, and make the "long dry spell" or the unusually long "wet spell" accountable for our own failure to do our duty.

CORN.

When corn is to be laid by, let cow-peas be sowed broadcast, as recommended in previous numbers. Cover them with a sweep or a harrow. They will shade the ground, act as a mulch round the roots of the corn, and besides yielding a valuable crop of peas, will give a large quantity of vines to plow under as green manure, or to gather and cure for hay. We much prefer the former use of the vines. They are a first-rate manure, and, in our opinion, at the best but a second-rate hay.

VOL. IV, No. 9—1.

COTTON.

This year cotton has had an unusually unpropitious start. Up to the middle of May it was very puny and sickly, and the heavy and frequent rains during the early part of June have in many places made matters worse. We must continue to cultivate the crop this year much later than usual. Indeed, in any season we advocate a late laying by of the cotton crop. As long as the sweeps can pass through the rows without breaking the limbs of the plants, we are satisfied that it is profitable to destroy weeds and grass and stir the soil. And especially is this true this year, when much of the seed was not put in the ground until the second week in May.

FODDER PULLING.

Before our next issue can reach our subscribers, in a large portion of the South fodder pulling will have begun. We have often endeavored to convince our readers that fodder pulling is a very poor policy, that fodder is the most expensive forage we can raise, and that we can only make it at the expense of the corn crop. If we wait to pull the fodder until the grain is fully matured, the fodder has lost most of its succulence, and consequently most of its value; and if we pull it in time the ears of corn are immature and never attain their fullness and weight. But if we must pull fodder we should try to save it well. Never allow it to get wet with rain after it has been pulled. It is better to bundle and stack it before it is half cured than to let it get wet and then dry it in the sun. If the weather is favorable, it should be fully cured and then stacked or put away in lofts, the latter being much the better way. But, we repeat, clover, millet, lucerne and hay should furnish all the forage we need for our stock. They are far

cheaper and far better than fodder, and it is now ridiculous to assert that they cannot be raised in any part of the Southern States.

DRILLED CORN.

The time to cut drilled corn is when the tassels are fully formed. It should be cut about three inches from the ground, a common sickle being the best implement we know for the purpose. Select a fine day for cutting. Cut from morning until dinner time, spreading the stalks thinly as you proceed. After dinner, the side which has been exposed to the sun will have become wilted. Turn the stalks, and after three hours' exposure the whole will be ready to tie up in bundles or bunches, which should not be larger than a foot or eighteen inches thick at the butt. Then set up five or six bundles on end together to form a shock, and cap if there be any appearance of rain. Next day untie and expose to the sun, reshocking in the evening, and repeating the process for three or four consecutive days, when the fodder will be sufficiently cured to put away in bulk. It is a good thing to sprinkle the stalks with salt when they are stowed away. A couple of gallons of salt to a load of fodder is sufficient.

TURNIPS.

July is the month in which to begin planting the turnip crop. We do hope that our four years' reiterated teachings as to the value and importance of turnips have not been disregarded, and that every one of our readers has had the good sense to prepare a good sized piece of ground for this excellent crop. When we say *prepare*, we mean heavy manuring, deep plowing, subsoiling and cross-plowing, until the ground is rich and perfectly mellow. Well rotted stable manure applied in the spring, so as to be fully incorporated with the soil, is in our opinion the best manure. But if you have not got it, or have failed to apply at the proper time, a highly ammoniated superphosphate applied in the drill, at the rate of four or five hundred pounds per acre, will be found an excellent substitute.

Commence with the rutabaga for stock the second week in this month, and if you fail to get a stand, continue to plant every ten days until you succeed. Sow thickly. Should all come up they can be easily thinned with the hoe, and should that enemy of the turnip, the turnip fly, attack them, his ravages will not be felt as much as where the stand is thin. Air-slaked lime or plaster dusted over the young plants while the dew is on them in the early

morning, has proved a protection against the fly. Of rutabagas, Carter's Imperial, Skirving's Purple-top, and Sharpe's Improved, are said to be the best varieties. Of the ordinary field turnips, Norfolk, Globe, Red-top and Flat Dutch, are the favorites.

PUMPKINS.

For milch cows, a few pumpkins will be found very useful. If you have a vacant spot of rich land, plant as you would watermelons in hills eight or ten feet apart. Leave two plants in a hill. Keep clean, and stir the soil occasionally until the vines cover the ground. The result will be fuller and richer milk pails and more butter.

SWEET POTATOES.

Let this valuable crop be now well worked. Let the soil be stirred, soft earth thrown to the vines, and every blade of grass and weeds destroyed. It is almost too late to plant any more slips, but if you have them, have the ground to spare, and will *grout* the roots of the slips in a thin paste of cow-manure and water, we would advise you to plant them after sun-down, shade from the sun until they become established, and take the chances of a good crop.

A Hint to our Agricultural Readers.

We copy from the *Western Farmer*, and adopt as the expression of our own sentiments the following sensible article, and wish that our agricultural readers would severally accept it as specially addressed to them :

"Most of us will agree that the leading purpose of an agricultural periodical should be to improve the condition of our agriculture—using the word in its broad sense. Just one of the many ways in which this result is to be gained, we mention here. *An agricultural paper should be a medium of communication between its readers.* It should not be simply an organ for the expression of the views of one man or half dozen men. No one set of editors, however practical, can make such a paper all it should be, unless they have the aid of its readers. We ask this help. We ask each reader of this paper to write for its columns.

"No man of ordinary intelligence can long use his eyes, ears, and reason in his business, without observing at least one thing which would be useful and interesting to others in the same business. Let us have at least one such fact or opinion from each farmer who reads this.

"No one man is so wise that he knows all about any one thing—certainly not about so complicated a science and art as agriculture; but what one does not, another may know, and so we wish this paper to be a medium through which we may all ask for information as well as give it.

"We wish each reader to feel that every department is open to him or her for stating facts or opinions, or asking information."

Letter from John Plowhandles.

HORSE-RACING AT FAIRS.

MR. EDITOR—I hear the managers and projectors of our State Fairs complain that farmers take so little interest in these exhibitions, that they will not take the trouble of coming to them, and that not one in fifty will prepare anything for exhibition. This is true to the extent that farmers do not attend and do not exhibit at fairs, but it is not true that they do not feel any interest in them. Were the original design of an "agricultural fair" faithfully carried out, were the premium lists prepared with the view to the encouragement of agriculture, the farmers would flock to the fairs and would exhibit their produce at them; but when they see thousands of dollars offered for the best race-horse or the fastest trotting-horse, and ten or twelve dollars only offered for the best bale of clover hay, or the finest bushel of grain, they naturally conclude that the name *agricultural fair* is a misnomer, and that a horse-race would be a truer and more appropriate designation. Farmers as a class are honest, straightforward men, opposed to humbug of all kinds, and especially opposed to humbugs of which they are to be the victims. They have no sympathy, connection or affinity with the men who raise, travel with, and run race-horses, and they are not willing to appear to believe that a show is for their advantage, and that they should give their time and money to support it, the greater part of the proceeds of which are to be devoted to jockeys, gamblers and professional exhibitors of "fast stock." While horse-racing and side-shows are the main features of our fairs the farmers will stay at home. They cannot afford to leave their farms, travel several miles and spend a few days at expense in a town to see horses gallop round a track, or see a mountebank go up in a balloon holding on to the ropes with his feet. They will not give a cent for either exhibition. But if all the money given in premiums be truly devoted to encour-

age the breeding of fine stock, good crops, improved systems of farming, useful implements—in a word, to advance the veritable interests of agriculture, they will give both their time and their money.

Of what practical advantage to the farmer is a race-horse, suppose him to be the fastest horse that ever galloped over a track? Do the mass of horse-racers, jockeys and those who frequent race-courses contribute anything to the improvement of agriculture, of society, or good morals? If not, and we believe no one can truly assert that they do, why should the two be mixed up? Let us have horse-racing by itself and agriculture by itself, and do not make me give my money to a pursuit I detest, and make me seem to think that my interests are being served.

Let us reverse the picture. Suppose we were to advertise a great race meeting "for the encouragement of fast horses," and boast of the thousands of dollars to be given in premiums for the swiftest running and trotting horses; and suppose we were to devote thousands to premiums for the best cotton, corn, small grain, hay, turnips, sheep, oxen, milch cows, &c., &c., and offer only a hundred dollars as a purse for the racers, how many of our friends, the racers, jockeys and sports, would come to our fairs? Should we have any right to complain if they did not come at all, or if they told us they did not care a cent about a plowing-match or a reaping machine, and would not give a cent to see either?

Our fairs are not agricultural fairs. They are race-courses, with a little agriculture thrown in, and so long as this continues, the honest, sturdy farmer will not cheat his conscience or allow us to cheat him into countenancing practices which he condemns.

While the agricultural societies depend on the subsidies of towns and cities to get up premium lists, which subsidies are only given to increase the importance or tickle the vanity of those places, and while the municipal authorities who furnish the money are allowed to interfere in shaping the premium list so as to attract crowds and get back the money they profess to give to agriculture, so long will the fairs be failures, because they are frauds. The show is not agricultural, as it pretends to be. The town authorities do not give a cent. They only advance a certain sum as a speculation, and regulate the exhibition so as to get back all they advance and more; and the Executive Committee of the State Agricultural Society

put their names to a deception and make themselves practically the stewards and judges of a horse-race.

I regret deeply the manifest falling off in interest in our fairs among the agricultural classes. I would gladly see our fairs what they ought to be. I would contribute freely to a purely agricultural show, but not one cent would I give to a horse-race.

Yours, respectfully,

JOHN PLOWHANDLES.

Green Manuring.

Whether the land which has borne a crop of wheat, oats, barley or rye is to be sown again in the fall for another grain crop, or is to be left fallow to be planted in cotton or corn the next year, there is no better or more economical mode of enriching and preparing it than by sowing it broadcast in peas at the rate of $1\frac{1}{2}$ or 2 bushels to the acre, immediately after the grain has been cut and removed, and plowing them and the stubble under with a good turn-plow.

In September when the peas have obtained their full growth, a barrel of lime per acre should be scattered evenly over the growing peas, and then the whole turned under with one of the many new plows which are specially adapted to the purpose. That which will bury the entire green growth is the best.

Even at the present price of peas, it will prove the cheapest mode of manuring grain land for use in fall or spring.

Professor Johnson in his great work on Agricultural Chemistry, 417-419, explains the principle upon which green manuring depends and illustrates the important practical results by which it is followed. He says: The plowing in of green vegetables on the spot where they have grown may be followed as a method of manuring and enriching *all* land, where other manures are less abundant. Growing plants bring up from beneath, as far as their roots extend, those substances which are useful to vegetation and retain them in their leaves and stems. By plowing in the whole plant we restore to the surface what had previously sunk to a greater or less depth, and thus make it more fertile than before the green crop was sown. This manuring is performed with the least loss by the use of vegetables in the green state. By allowing them to decay in the open air, there is a loss both of organic and of inorganic matter—if they be converted into farm-

yard manure there is a large loss. *In no other form can the same crop convey to the soil an equal amount of enriching matter as in that of green leaves and stems.*

Another important result is that the beneficial action is almost immediate! Green vegetables decompose rapidly and thus the first crop which follows a green manuring is benefitted and increased by it.

It is deserving of separate consideration that green manuring is especially adapted for improving and enriching soils which are poor in vegetable matter. Living plants contain in their substance not only all they have drawn up from the soil, but also a great part of what they have drawn from the air. Plow in these living plants and you necessarily add to the soil more than was taken from it—you make it richer in organic matter. It would be difficult to define the limit beyond which this enriching process cannot be carried by repetition.

For the Southern Farm and Home.

Haymaking.

MR. EDITOR—I know that it is not a settled question among farmers when hay should be cut, or rather when grass should be cut to make hay. I think this difference arises because we do not all raise the same variety of grass, and because some ripen much sooner than others, but I believe that it would be perfectly safe to lay down as a rule to cut every kind of grass when it is in full bloom and before the blossoms begin to fade. It must not be cut before it blooms, because it is immature, and there is a great loss in quantity, and it must not be allowed to stand after it has bloomed, because it becomes dry and fibrous, loses its succulence and deteriorates in quality. Of the two, it is better to cut before it is in full blossom. The loss is less. This is true of clover as well as of grass.

The reason for this is very plain, if we only give ourselves time to think. When the grass flowers it has attained its full strength, and if cut at that time and carefully cured it retains in its dry state all its juices and succulence.

The great object in curing hay is to put it away as green as possible without danger of its heating or becoming mouldy. The more hay is protected from exposure to dew or rain, the better it is. Drying it in the sun after it has been saturated with rain, injures it materially. If it should be put away too green, and heat a little in the stack, the injury to it would be

much less than that resulting from drying after exposure to rain. I would recommend that the grass be cut after the dew disappears. I would leave it in the swath until evening. I would then gather it into small cocks which I would open next day and spread evenly over the ground. If the weather is good, that is, if there be sun and no rain, on the evening of the second day the hay is sufficiently cured to haul home.

If the barn is not capacious enough to hold it, stacks as large as possible are the next best way of disposing of it. The advantage of the large stacks consists in the quantity protected from the weather bearing the largest possible proportion to that exposed, and thus rendered worthless, except for manure. C.

BARTOW COUNTY GA., June, 1873.

For the Southern Farm and Home.

The Value of Agricultural Clubs.

MR. EDITOR—I am much pleased with the letter in your last issue (for June) from "John Plowhandles," showing the objects and good influences of the "granges" which the order of the Patrons of Husbandry is establishing all over our country. What we need is to get our people to come together, exchange ideas and information, discuss matters relating to their calling, and talk, not "deliver orations," concerning things relating to the farm, garden, stock-yard, household, markets, &c., and at the same time cultivate more intimate relations with each other. We need to combine for our mutual good, and whether we do so as members of "granges," or as members of agricultural clubs, is a matter of little consequence. "A rose by any other name will smell as sweet." So that we secure the substantial benefit, I do not care a cent for the form. I do not know of any more useful agency for the enlightenment and improvement of the agriculturists of the South than the county or neighborhood club—call it "grange" if you will. Look at the immense good that these societies, where well established and regularly attended, have done at the North. Take up any copy of the *Weekly Tribune*, and read the proceedings of the American Institute Farmers' Club. See what a number and variety of subjects are discussed; what a mass of useful information is elicited; what plain, practical sense distinguishes all that is said; with what ease and clearness the members tell what they know. One man wants information on turnip culture, and asks some question on the subject.

One, two, three, and perhaps half a dozen, members who know all about turnips from practical experience, answer the question. In the course of the discussion, a new implement of husbandry is mentioned, and its merits or demerits are immediately pointed out by men who have used it themselves, or have learned all about it from members who have tested it. And so one subject leads to another throughout an almost endless range of subjects, all interesting and instructive, discussed in simple language, not in set speeches, so that the record of the proceedings of this club during a year contains mention of almost everything upon which the members can desire information, from the most important to the most trivial.

This is the model we would take for our County Agricultural Societies. Of course we could not establish them on as large a scale, nor could they meet as often as that in New York; but with very little expense of money or time they could meet in the evening every fortnight or every month, discuss freely among themselves the matters upon which they severally feel an interest in relation to Southern Agriculture, have their proceedings recorded by some member who has the pen of a ready writer, and thus collect a mass of valuable information, from which they could from time to time furnish interesting extracts to the agricultural press, which would be very glad to publish them.

Now the isolated farmer is liable to be duped by all the humbugs which are daily presented to defraud him. He has no access to statistical information of crops, produce markets, etc., except that furnished by those whose direct interest it is to deceive him. Let an agricultural society be established in his county, and the peddler of patent implements, self-acting fertilizers, six-horse powers that can be run with one mule, corn that matures in a month, and cotton seed that produces several bales to the acre, and a staple six inches long—will find that his occupation is gone, and that the farmers are not such fools as they look. There is no more potent agency to explode humbugs than such a club. Then, being in the receipt of authentic statistical information as to the condition of the crops and the state of the markets, they can regulate their planting operations and the sales of their produce with a knowledge of what they are doing, and not drive along blindly as now, depending solely on information furnished by speculators.

AGRICOLA.

For the Southern Farm and Home.

"The Best Policy Planters should Pursue."

MR. EDITOR—We have read within the past year several able, well considered and judicious treatises upon the above subject. Some advise the creation of a great joint stock banking association and steamship company, in which cotton producers should be the stockholders, and their cotton should represent the capital stock at gold value. Others advise the erection of giant cotton manufactories, in which the producers should spin all their own cotton. Others urge the necessity of an immediate importation of Chinese laborers to take the place of the negroes, and enable us to increase our cotton crop at a much reduced cost for labor. Others are strenuously opposed to planters selling to anybody one acre of the lands they now own, but advise them to keep all their lands, in the hope that they will yet become very valuable; and others insist that if every land owner were to sell or give away one half of his lands to industrious agricultural immigrants, the other half would speedily become of vastly more value than the whole is worth now.

The authors of these various policies are earnest, thinking men, who are perfectly sincere in their counsels, and are satisfied that they have severally hit upon the "best policy planters should pursue." There is undoubtedly much force in each, and the time will come when many of the ideas which they present will be adopted and reduced to practice. We refer especially to the establishment of a system for the direct exportation of our cotton to Europe, and of a vast increase of the manufacturing industry of the Cotton States. As soon, too, as our social and political condition becomes settled, and the rights of self-government are restored, the tide of immigration which now flows northward and westward will be turned South, and foreign skill, muscle, intelligence and money, will be directed to our country, so richly endowed in all that constitutes natural wealth and prosperity. So soon as we have accumulated capital, are out of debt, and can pay as we go, we may establish the bank and steamship line. When we have surplus income, and skilled labor in sufficient numbers to insure successful operations, we shall certainly manufacture our raw material. We have now every facility, capital and skilled labor alone excepted; and so soon as our political status is fixed, and we know ourselves, the nature of our government and laws, and society

becomes re-organized upon an enduring and peaceable basis, we can have as many immigrants as we desire.

In the meantime, however, to enable us to recover, partially at least, the ruinous losses resulting from the war, and the state of *quasi* war to which we have been subjected since our soldiers turned their swords into plowshares, there is a policy which planters should pursue, and in our humble judgment it may properly be called, *par excellence*, "the best," because its results are independence, abundance, happiness, credit, and, in time, wealth. With these banks, steamships, cotton mills, and immigrants will be added to us.

This policy consists in raising our own corn, wheat, rye, oats, barley, peas, hay, stock, and meat. When a planter has for himself, his family, his hands and his stock, an abundance to eat, when he does not need to purchase anything but groceries and clothes, he may depend upon it that he is pursuing a better policy than the planter who raises cotton at a cost of 14c. or 15c. per lb., sells it perhaps at a loss, and buys his corn at \$1 50 per bushel, his hay at \$2 per cwt., his meat at 20c. per lb., his oats at \$1 per bushel, and has no flour but what he buys at the store. Let any man who pursues this policy—who thinks that he can make money by raising cotton which he sells, say at 18c., and by buying all his provisions at the market price—calculate the expenses of making his cotton crop, allow 7 per cent. on his investment in land, mules, implements, etc., and deduct this and what he has paid for corn, meat, hay, etc., from the net proceeds, and he will find that his policy is a long way from being the "best."

Let us examine the figures, and take a planter who cultivates 500 acres of open land, employs 25 hands, and has all the necessary mules, horses, wagons, plows, etc., which are necessary to make a crop. He thinks it pays better to raise "all cotton and no corn," and believes that it is folly to plant land in corn which would produce, perhaps 10 bushels, worth \$1 per bushel, \$10—which, if planted in cotton, would yield 200 lbs. of lint cotton, worth \$36. We select such a man, and we are sorry to say there are plenty of them, and now, look how his "policy" works.

Say he makes four 500 lbs. bales to each of the hands, (which is a fair average,) and sells his 100 bales at 18c. per lb. net, after paying freight, commissions, etc. He thus receives \$9000 for his cotton crop. Now let us place

this sum to his credit, and then examine the debit side of the account. 25 laborers at \$1 25 per annum, cost \$3,225. 4,550 lbs. of meat to feed 25 hands, (allowing 3½ lbs. each per week,) at 20c. per lb., \$910. Wages of overseer and his board, \$750. Blacksmith's work, iron, etc., to keep up tools, wagons, etc., \$250. Loss of mules by death and depreciation in value, say \$500. Depreciation of implements, \$250. Purchase of salt, nails, and sundries during the year, \$250. Taxes, \$250. Interest on the investment, say \$10,000 at 7 per cent., \$700. The total of these sums is \$7,085.

Now for the no corn part of the policy.

The 25 hands, consuming each 1 peck of meal per week, require 325 bushels of corn, which, at \$1 per bushel, will amount to \$325. The 20 mules and horses, which are required to work 500 acres of land, will consume, or ought to consume, 75 bushels of corn each, in the year, 1500 bushels, equal to \$1,500, and they will consume, at 10 lbs. each per day, 73,000 lbs. of hay, worth, at \$2 per cwt., \$1,460.

The books, therefore, will stand thus:

Net proceeds of cotton.....	\$9,000
Expenses of making it.....	10,370
Loss on the year's operation.....	\$1,370

We have not, it is observed, made any allowance for fertilizers. But suppose they have been used, and that 70 tons at \$70 per ton, have been applied, at a cost of \$4,900, exclusive of freight and hauling, and suppose they have increased the crop to 6 bales to the hand instead of 4, the result would be about the same.

Our calculation is, it must be admitted, a moderate one. On an average of years more planters make less than 4 bags to the hand without fertilizers, or 6 bags with them, than there are who make more than this. Since 1865, those who have bought corn and provisions have oftener paid more than less for these articles than the prices we have named. We have calculated cotton at 18c. *net*. That is certainly a liberal estimate. Who would not be willing now to take that price for his growing crop?

But on the other hand, let us take a provision-making planter whose practice it has been to have corn and meat of his own raising who has the same amount of open land, of which he has 25 acres in wheat, 25 acres in oats, 250 acres in corn, and the rest in cotton. Say that his expenses for labor, overseer, blacksmith's work, loss and depreciation of property, cost of sundries, taxes and interest on investment, are

the same. He makes half the quantity of cotton, yielding a net income of \$4,500. He raises, say 400 bushels of wheat, worth \$600; 400 bushels of oats, worth \$300; 3000 bushels of corn worth \$3000; 1000 bushels of peas, worth \$1000; and all the fodder he needs to feed his stock. He does not expend one dime for the meal for his hands, the food for his animals, or for Northern hay, thus saving \$3,285. He has plenty of corn to raise his meat, and is thus able to furnish his hands at less than half the market price—a saving of \$455, and has a good surplus in his crib for another year.

Now how does his account stand at the end of the year? Let us take the debit side first.

His expenses, same as the all-cotton planter's are:

Labor.....	\$3,325
Overseer.....	750
Blacksmith's work.....	250
Loss and depreciation of property.....	750
Sundries.....	250
Taxes.....	250
Interest.....	700
Meal for hands.....	325
Meat for hands.....	455
Corn for stock.....	1,500
	<hr/>
	\$8,455

His income is as follows:

Cotton.....	\$4,500
Corn.....	3,000
Peas.....	1,000
Wheat.....	600
Oats.....	300
	<hr/>
	\$9,400

To this should be added all the straw, shucks and pea hay, and the surplus fodder, after supplying the stock. Then add the saving of time and labor in hauling, loss, and wastage in bought corn, hay, etc., and then consider the advantages to the plantation from even a partial rotation of crops, and it will be found that the planter who follows this policy is doing a better business in every way than the "all-cotton" man. His teams look better, and are worth more. His overseer never tells him the "corn is all out," that he has taken the mules out of the plow and has sent after the corn to the depot twice, and that it "ain't come yet;" that the last meat that was bought was bad, and the "hands is complaining;" that the cows are all going dry for want of peas; that he can't make the corn and meat hold out according to the weights given by the merchant; that some of the last corn was bad, and two of the best mules died of the colic from eating it; that the hay was musty in the middle of the bales, etc.

Then suppose an all-cotton man has a bad year—that a drought, too much rain, the caterpillar, or army worm, cuts off his cotton crop, and instead of 100 bales he makes only 50; or suppose the price falls to 15c. or even 12c. per lb., or lower, because owing to the spread of the "all-cotton-and-no-corn" mania, the crop is very large; or suppose the corn and hay crop of the West and North fails, and corn, hay and meat bring higher prices than they bring even this year—then compare the man who has risked everything on his cotton crop with the man who has "a plenty of everything to do him." The one is utterly ruined. The other is able to go to work to try again. He, his hands, and his animals, have plenty to eat. He does not owe anything. He has no necessity to borrow. His land is improving. His credit is good. *He is independent.* His is the policy for planters to pursue. It is the "*best.*" AMICUS.

For the Southern Farm and Home.

Raising Horses.

MR. EDITOR—I agree with you that the planters of the South can and ought to raise their own horses, and that they can do so at much less expense than by buying them abroad. But if we go to work to supply ourselves at home, we should avoid the mistakes which are so commonly made in horse-breeding States, and which have within the past few years caused the stock to deteriorate so materially. The chief of these mistakes is letting the sire to too many mares during the season, and the next greatest mistake is the imperfect condition of the stallion. No horse, however vigorous, can produce good stock if he is allowed to serve more than two, or at the outside, three mares a day. If he does more than this the later colts will be weak, spindling and good for nothing, while the earlier colts may be very fine. To insure this moderation, a planter or a small community of planters should have their own stallion, and not allow him to serve more than their own mares. Stallions owned expressly for service, and whose owner tries to make all he can out of him, does not care very much how the colts may turn out, especially as three or four years must elapse before the evil is discovered.

I had a friend who owned an excellent horse, splendid in form, perfect in action, of illustrious descent, and in superb condition. He allowed this horse, which he habitually rode at one time, to serve a few of his own mares. The colts were worthy of their sire. I did not

know one of them that did not prove very valuable.

A year or two after this, when he went into politics and neglected his planting operations, his horse was advertised for service generally, and for the encouragement of improved stock, was allowed to serve either gratuitously or for a very small fee. Every one from far and wide wanted one of his stock. I suppose not less than one hundred and twenty mares were served by him in one season. I do not know of any of these colts except the very earliest which was good for much.

The next thing is condition. Condition does not mean fatness. It means health, vigor, absence of superfluous flesh, clean muscle, good wind. He must be in good working order, have regular exercise, and must be well fed without being pampered.

Some of the best horses I have ever seen in my life have been "got by chance," that is by the accidental connection of a stallion in working order and regular exercise.

The stock of the American farmer is falling off everywhere as far as my observation has gone, and the reasons are those which I have stated above. If we are to raise our own horses let us avoid these mistakes, and raise good ones. GOLD DUST.

CHESTER, S. C., June, 1873.

For the Southern Farm and Home.

The Best Soil for a Vineyard.

MR. EDITOR—Many in the Southern States would plant a vineyard and make a business of raising grapes for wine, brandy, &c., but they are deterred from doing so by the failures they have heard of having been made by their friends and neighbors. In nine cases out of ten the cause of these failures has been the selection of a soil unsuited to the vine. The best soil I know—and I say so because in many years' experience I never saw grape-vines fail on it—is a grayish loam with a red subsoil resting on a limestone substratum. Of course this should be well prepared by deep and thorough cultivation. Stiff, sticky lands will not do for vineyards. They may be improved slightly by mixing lime and ashes with them, but they can never be trusted to produce sound fruit.

The aspect of a vineyard is more important than is supposed. A southern exposure is the best, next a western, next an eastern; a northern is the worst. BINGEN.

NATCHEZ, MISS., June, 1873.

*For the Southern Farm and Home.***Summer Resorts.**

MR. EDITOR—There is no people that I know of that leaves home to spend the summer to the same extent as we do. No matter where we reside, habitually we feel it incumbent on us every year about this time to pack up bag and baggage and take our families to some of the many "springs" that we see advertised as warranted to cure every disease flesh is heir to. There is, of course, a reason for this. Our summers are very hot, and in many places the climate in summer is not healthy. But the question is, do we improve our health or add to our comfort by going to the fashionable watering places, where the accommodations are very poor, the food often indifferent and not enough of it, the crowd large and mixed, and the so-called recreations are nothing but dissipation? It costs like five hundred to live at these places. It takes a good pile to get there. The rooms are small and ill-furnished always. The meals are poor and uncomfortable generally. The attendance invariably depends on the extent and frequency of the bribes to the servants. The water is good if you are sick, and a competent physician says that they suit your particular ailment, and the air is pure and invigorating. But promenading and dancing, or playing cards in heated rooms till late at night with the Jacks, Toms and Harrys from every part of the country, cannot be considered healthy amusements.

Instead of spending our time and money in the heat, fuss and dissipation of these fashionable places, let us go to our mountains, build comfortable cottages, and there ruralize in retirement and enjoyment. The mountains of Georgia, Tennessee and Virginia are full of delightful spots, where the pleasure-seeker, the health-seeker, and those in search of relaxation, can find all they desire.

I have a lively recollection of a visit I paid two years ago to the Virginia Springs; of my long, sweltering, dusty journey; of my wretched bed in a part of a cabin; of my struggle for breakfast, dinner and supper, and of the fashionable amusements. Much as I love fine scenery, enjoy pure air and good water, I felt I had bought them at too high a price. I contrast with that experience my real enjoyment at Toccoa and Tallulah one summer, or a short visit during another summer to Sewanee, on the Cumberland range.

HEALTH-SEEKER.*For the Southern Farm and Home.***Surface vs. Deep Manuring.**

Of course it is best for all the soil to be rich, and then every one of the numberless roots that a plant sends forth can find nourishment in abundance. The great objection to putting a quantity of manure in a lump consists in the fact that then the roots all have a tendency toward that particular spot; only a given number of them can operate there to advantage and the rest perish, or, at best, find nothing to bring home to the parent stalk except what could just as well be conveyed by a less number. Take any vegetable production—even of those generally called tap-root plants—turn a gently flowing stream of water upon it, so as to wash all the dirt away, and you will be astonished at the numerous emissaries it has sent out in quest of food.

The condition most favorable to vegetation is where all these minute fibers can find, in whatever direction they may turn, the nourishment which is essential to the best growth of the plant. If in spreading out, in the manner most natural to them, they do not obtain what they seek, then they fail to perform their functions to the best advantage. They do not carry back to the stalk all the food it needs; they become dwarfed, to say the least of it, and it is only those which bring the desired sustenance that are really useful. In this fact consists the well-grounded objection that some people have to manuring "in the hill."

Many farmers are entirely opposed to putting fertilizers deep in the ground, believing as they do that surface manuring is the best. It results from a careless habit of observing and thinking. Manure applied to the top of the soil generally in the course of cultivation becomes diffused in such a manner that many of the roots can draw nourishment from it, whereas that which is placed deep in the ground is hardly ever reached by the shallow plowing in vogue here during the working of the crops, consequently it remains undisturbed in bulk, with the results described in the beginning of this article. But other things must be taken into consideration. One of the essentials to the useful action of manure is moisture. It is only in a state of solution that plant-food can be conveyed to the recipient. The nutriment for the vegetable is carried through innumerable minute pores—through channels so contracted that only a fluid can find its way along them. Of what avail, then, is the richest ma-

nure ever applied so long as it remains in a perfectly dry state? How can it reach its destination through canals that have never been known to pass anything but liquids?

Here, then, is the argument in favor of putting manure deep in the ground. The surface of the soil first becomes dry. The top of our land earliest feels the effect of drought. The lower down the manure the longer it remains moist, the longer it continues to give off portions in a liquid state, the longer it is able to send nourishment to the plant above ground through the pores of the roots that delve down to seek it. This is the best reason with which I am acquainted why we should put the manure, where we have only a limited quantity, a good way below the surface. The cotton country, for which I am now writing, is a land subject to the most unexpected and long-continued dry weather. During such seasons, what good can we expect from manure lying so near the surface that it becomes "as dry as a powder-house?"

The Advantages of Underdraining.

Ogden Farm finds encouragement in the following passage in the Hon. George Geddes' Essay on Wheat Culture: "Undrained clay lands are never worn out, for the owner that lacks the energy to free them from stagnant water never has force enough to exhaust their fertility by cropping. Manure on such land is nearly thrown away. Draining is the first thing to be done; next, thorough cultivation, then manure. Whoever reverses this order throws away his money and his labor."

This would be a good text for every farmer to keep constantly in mind. The *profit* of farming comes entirely from the *surplus* of production beyond the grand total of the cost of interest, labor, seed, manure, and wear and tear. These are nearly fixed quantities. They are at least as great, in the aggregate, with medium crops as with good ones. If thirty bushels of corn to the acre will barely return the outlay, sixty bushels may give a clear profit equal to the value of thirty bushels. There are thousands of farms in the country whose soil contains enough of the elements of fertility to produce fair crops with the aid of ordinary manuring, (if only these elements were come-at-able,) but which, by reason of their soggy and unpleasant condition, would do less injury to their owners if they were hopelessly barren. In the spring and early summer they

are moist and cold—more like putty than like arable land; in July and August they are baked to a crust; and when the fall rains come they revert again to their weeping state. Any effort to make good land of such a farm as this without draining is simply an effort wasted. Neither labor nor manure can do much to drive away the demon of "bad luck," by which every path of its owner is beset. I have scores of letters from the occupants of such farms, and I have had for years. I began by advising this and that make-shift, where it was claimed that the expense of draining could not be borne, but I have finally learned to say, point-blank, to any man who is trying to make his way on this kind of a farm: "Either drain it or give it up! You can make more money by working at day's work, on good land, than by fighting year in and year out against the established laws of Nature. If you can't do better sell off your stock, and if necessary work for a neighbor enough of the time to earn your bare living. Spend the rest of your time and all the money you can raise in draining the *best* field you have got. Don't imagine that your case is to be an exception, but accept the fact, now, that you *can't afford* to farm wet land—either own up that you are only fit for a day laborer, or buckle to and make your land worth cultivating."

There are two great obstacles to the advancement of underdraining, viz.: One is, the idea that land which suffers from *drought* does not need draining, when the fact is that land often suffers from drought just *because* it needs draining. Take out the water and let in the air, so that the soil can be put in proper tilth, and it will be able to withstand drought. The other is, the not unnatural notion that the first land to be drained is that which is now the wettest. In my judgment the improvement should be first applied to those fields which are just dry enough to be considered arable, but which, two years out of three, disappoint the farmer's hopes and produce barely enough to repay the cost of cultivation. If such land as this is drained it will pay a profit. If a back swamp lot is drained it may be years before it will do more than pay the expenses of its management. Begin with the very best land that needs draining at all and *make it produce a profit*, and then take the next best, and bring that to a profitable state, and so on until the back swamp comes in its turn. What we want is not so much large crops as profitable crops. A hundred dollars' worth of corn that has cost a hundred dollars

had better not have been grown. It don't pay to work over large areas for meager produce. Pile on the steam! crowd the production to the most remunerative point! and then extend your operations to the next best field and make that pay a round profit. This is the soundest principle of good farming, and in carrying it out we shall have no more efficient aid than is rendered by thorough draining on the best lands that need draining.

When this is accepted as the correct principle we shall see draining extending in all directions. So long as the chief effect of draining is to convert innocent waste lands into fields for unprofitable work its progress will be but halting, and farmers will continue to cry out against its great cost. Cost? Why, suppose it costs as much to drain an acre of land as to buy an adjoining acre. This is no argument against it. The one acre, *drained*, would pay a handsome profit; the two acres, *undrained*, would pay no profit at all, and had better be left to grow wood. What is wanted, as the foundation of the best improvement, is a conviction in the minds of the farming public that it is better to have good farms than to have large farms. That point being gained, all the rest will come as a matter of course. Let us confine ourselves to such areas as will give us the most money for our farming, and leave the rest of the land to take care of itself.

—*American Agriculturist*.

Why the South Remains Poor.

The great problem of political economy for us of the South is to combine the producing and the manufacturing interests. Sectionalism has almost been our ruin—we do not cherish it. We wish to see the people North and South prospering, but we can see no prosperity for the South until we learn to produce our food, manufacture our staples and give employment to our mechanics. We want factories of every kind, but these factories must have patronage, and like charity, this patronage must begin at home. We remain poor because we must have everything from the North. We plow our crops with Northern made plows, hitch our teams with Northern made harness, cut our wood with Northern made axes, dress our lumber with Northern made planes, drive our Northern nails with a Northern made hammer, and paint our houses with a Northern made brush dipped in Northern paint.

In short, we are rocked in Northern made cradles, wrapped in Northern made swaddling clothes, suck our paps made of Northern made corn starch, through a Northern made nipple, from a Northern bottle. We are educated from Northern made books, are poisoned with

Northern physic, and being gently laid in a Northern coffin, our minister clothed in Northern made clothes, takes our funeral text from a Northern made bible, and loving hands in Northern made gloves, lower us by means of a Northern made rope into a *Southern* grave, and our last resting-place is marked by a tombstone quarried, dressed, and carved at the North. This policy is not the true one. We must manufacture and patronize home institutions. Then, and not until then, can we expect to be independent of the Northern States —*Agricultural Journal*.

The Cotton Worm.

HOW THE BROODS COME, AND HOW THEY MAY BE DESTROYED.

From the Report of Prof. Riley, of St. Louis, to the Indianapolis Agricultural Congress.

It was my pleasure, well nigh a year ago, to be with you at your organization in the city from which I hail. Few things were more characteristic of that reunion of the friends of agriculture from different parts of our broad land than the large representation from the South, and the mutual good will and cordial fellowship which reigned on all sides. There was manifested a due appreciation of science in the honor paid to one who did much to make us masters of the elements, and whom we all sorrow for as having since left us for that world which knows no sectional strife nor brotherly feud. There was also manifested a strong desire to profit by one another's experiences, and it is for these reasons that I am led to offer, to the members from the South, a suggestion which may prove of little service, or, per contra, of the utmost value.

I gave you last year some idea of the immense sums which the farmers of this country lose by insect depredations, and it is unnecessary here to enlarge upon the subject. You, as cotton growers, are well enough aware of these ravages, for in a single fortnight last summer one single species—the cotton worm—ate up something like \$20,000,000 worth of cotton for you.

Some of the Northern States have been sufficiently wise and provident to appoint officers whose duty it is to study these insect pests, and suggest remedies for their ravages; but in the South no such officers yet exist. You are, in consequence, entirely at the mercy of this apparently insignificant worm; and it is a matter of surprise that, where the losses are so heavy, some efforts have not been made to get the mastery over the pest by delegating some individual or commission to make thorough investigations and experiments upon it. Up to the present time no really practicable remedy has been discovered. Hand-picking is not wholesale enough. Fires, lights and traps, containing attractive but poisonous sweets, together with other devices, intended to allure and destroy the parent moths, are of little use, except where they can be generally employed throughout whole districts—and this implies an amount of intelligence, organization

and unity of purpose rarely if ever found in any farming community. Carbolic soap has failed to fulfill the hopes and prophecies of its advocates. Now it has never been my fortune to experiment in a cotton field, but from my experience with insecticides in other fields, I feel quite assured that by a proper use of Paris green the cotton worm may be mastered.

In the so-called Northwestern States, as you are doubtless aware, we have been sorely troubled, during the past decade, by the Colorado potato beetle (*Doryphora ro lineata*), an insect that affects the potato very much in the same way as the cotton worm affects the cotton plant; but from which it is not likely that you of the South will ever suffer. We manage to subdue and defy it by a proper use of the mineral mentioned, and from my experiments upon other leaf-devouring worms, many of them belonging to the same family as your cotton worm, I am satisfied that this last will succumb to the mixture I propose even more readily than does the potato beetle.

Paris green, or Scheele's green, contains a varied proportion of arsenious acid, and is a deadly poison; but the manner in which it may be used to counteract the cotton worm, renders it perfectly harmless. If the green is pure, which can generally be ascertained by the brightness and intensity of the color, it may be mixed with thirty parts of flour, plaster, slacked lime, or ashes, and still be thoroughly effectual. The least possible dusting of this mixture upon the plants will be the means of destroying all the worms upon them, without the least injury to the plants themselves. The green should never cost more than twenty-five cents per pound, at wholesale, and thirty pounds of the mixture will suffice for several acres. It is best dusted on to the plants early in the morning while they are moist with dew. It may be dusted in various manners, and some persons, in fighting the potato beetle, have found an old sleazy sack, such as used for table salt, to do good service, when attached to the end of a stick. It is most safely applied, however, by aid of a perforated tin box attached to the end of a stick three or four feet long. Such a box can be made of any desirable size. The least possible dusting suffices, and by taking the handle of the dust-box in the left hand, and then tapping the box with another stick held in the right hand, one can walk rapidly along the rows and regulate the amount sifted. The green cannot well be mixed with the flour or plaster except by the aid of a mill, and it is for this reason that those who mix in large quantities have the advantage. It is most effectual when mixed with flour, though plaster has the merit of cheapness. Believing firmly that in this mixture we have a cheap and available antidote to the cotton worm plague, I am anxious to give the suggestion as wide a circulation as possible, in order that it may be thoroughly tried and reported on the coming summer.

An earthquake will bring all the people of a city to their doors; so some grief or sorrow brings the soul to the windows of life.

From the Chattanooga Times.

The Iron Producing Capacity of Georgia, Tennessee and Alabama.

McMINNVILLE, MAY 28, 1873.

Gov. John C. Brown, President of the Atlanta Convention:

DEAR SIR—I was induced by friends to attend the Convention lately held in Atlanta, Ga., to introduce for the consideration of its members a report showing the effect a "Canal to the Sea" would have upon the iron and coal interests of Georgia, Tennessee and Alabama, and as soon as practicable after the organization of the Convention I introduced a resolution asking the appointment by the President of a special committee of three, to report upon these objects. The "Committee on Business," to whom my resolution was referred, did not consider it, consequently at the solicitation of several members of the Convention from Kentucky and Tennessee, I address your Excellency this letter, embracing such facts as I presumed a committee would report to the Convention.

In September, 1859, I had the honor to address a letter to Col. J. D. Morgan, an honored citizen of Nashville, in which I stated that Tennessee, Georgia and Alabama would become the Wales of America in the manufacture of pig iron, in consequence of the low cost of production, and made an estimate of the cost of a ton of pig iron in these States, which was as follows:

2 tons ore at \$2 00.....	\$4 00
80 bushels coal at 8 cents.....	6 40
Ton of limestone.....	50
Superintendence and labor per ton.....	4 00
Wear and tear per ton.....	50
Interest per ton.....	1 00
Incidentals per ton.....	50

\$16 90

It is gratifying to me, sir, to be able to state that my estimate made four years ago has been realized—that pig iron is now being made in these States at less than my estimated cost; and it is still more gratifying to me to assert, as the facts warrant me to do, that these States—Tennessee, Georgia and Alabama—are now manufacturing pig iron at a less cost than any other State, place or country known to the business.

The actual average cost of a ton of pig iron in favorable localities in Central Pennsylvania, as stated by W. E. S. Baker, Esq., Secretary and Treasurer of the Eastern Iron Men's Association, is \$29 65.

The cost of a ton of pig iron in Chenango Valley, Pennsylvania, and Youngstown, Ohio, as stated by I. G. Butler, Jr., Esq., is.....	\$31 00
The cost of a ton of pig iron in Pittsburg, is.....	29 00
The cost of a ton of pig iron in Steubenville, O., is.....	31 00
The cost of a ton of pig iron in St. Louis, is.....	32 00
The cost of a ton of pig iron in Great Britain, in gold, is.....	21 00
The cost of a ton of pig iron in India, in gold, is.....	18 00
The cost of a ton of iron in Georgia, Tennessee and Alabama, is less than.....	16 00

or a little over one-half what the cost is in the principal iron producing sections of the United States.

The cause of the cheapness of production here as compared with the North and East is

of easy solution. There, the material which enters into the make of iron—coal and iron ore are separated several hundred miles, and require river, lake and railroad transportation and frequent handling to bring them together; here, coal and iron ore, both of superior quality, lie in close proximity, sometimes in the same mountain one above the other. For instance, the manufacturers of pig iron in Pittsburg bring ore from the Lake Superior iron region first by rail to Marquette, twelve miles, thence by lake several hundred miles to Cleveland, Ohio, thence by rail over 130 miles to Pittsburg, making the cost of ore alone for a ton of iron \$16 00. At the Rockwood furnace in Roane county, Tennessee, a tram-way half a mile long transports both coal and ore to the furnace, the cost of the ore for a ton of the iron is \$3 00. What then can prevent these States from soon becoming the Wales of America? Nothing but the want of water communication with the sea—the great West, and those “inland seas” bounding one-third the Union in the North.

Thirty years ago the world's product of pig iron annually was 3,000,000 tons, now it is 12,000,000 tons. Then the product of Great Britain was 1,000,000 tons, now it is 6,000,000. Then the production of the United States was 285,000 tons, now it is 2,250,000 tons. Thirty years hence the ratio of increased production being the same as the past thirty, (of course it will be much greater), the annual pig iron product of the world will be 48,000,000 tons, that of Great Britain 24,000,000, and that of the United States 18,000,000 tons. But from the mutterings we hear from Great Britain—from England—it is apparent that she has reached the topmost round in the ladder of prosperity in the production of iron. That which enters into the make of pig iron, coal and iron ore, is being exhausted so rapidly that her statesmen are alarmed for the future in regard to coal, and a political economist has said: “We may conclude the time is not far distant when England must surrender to her competitors many of the industries of which she has hitherto enjoyed a practical monopoly. Coal may be said to be the nation's prosperity, and so long as it remained abundant and cheap there was practically no limit to the expansion of its industries; but with coal as now, scarce and dear in proportion to the demand, the British manufacturer finds himself placed at a serious disadvantage. With cheap production he could supply three-fourths of the world's markets, but as his wares increase in cost, competition is encouraged which might not otherwise have been possible. Dear coal, means high prices in every department of trade. If the present scarcity of coal in Great Britain is due to the fact that its mines are no longer able to yield what is needed to carry on its great industries, those industries must languish, and of these iron manufacture is the surest and most seriously affected.” What are the facts?

The coal mines of Great Britain have reached the maximum of their production, 100,000,000 tons a year, and cannot now yield sufficient to make it “abundant and cheap.”

The shafts of many of the mines, it is said, have attained to the depth of 2,000 feet, and at that great depth the thermometer stands at 80 deg. Fahr., which renders labor difficult and expensive. Coal a few years since was sold in England at ten shillings or two dollars and forty cents a ton, now it is worth forty shillings or nine dollars and sixty cents a ton. The cost of making a ton of pig iron in Great Britain a few years past was forty-five shillings or ten dollars and eighty cents a ton, now it is eighty-seven shillings or twenty-one dollars, in gold.

Mr. I. Lowthian Bell, President of the English Iron and Steel Institute, said, in a recent address: “In by far the greater number of the European States, according to our present information, there is a limit to any rapid increase in the production of iron. . . . The impediment which stands in the way of any great extension of the continental iron trade is coal. . . . If we have to apprehend the advent of a powerful rival in the iron trade, it is not the old world of Europe we have to fear, but the immense and undoubted powers possessed by the Western Hemisphere. In ores of the finest descriptions the resources of the United States are unlimited, while in coal our own great wealth is, in comparison, but poverty. . . . In short, there is apparent but one bar to a boundless production of iron in the new world, that of human hands to manufacture it.” These few remarks of Mr. Bell, then, show conclusively that there can be but a slight if any increase in the production of iron in the old world. In that event, it is palpable that the new world must increase its iron production far beyond its ratio. The iron scepter is slipping from the hands of the European manufacturers, and it will naturally fall into the hands of the American manufacturers. They alone are able to grasp it, and those three southwestern States, Tennessee, Georgia, and Alabama, with a greater area of coal and iron ore than in England, Scotland, and Wales, and a climate so genial that it is incomparable, must soon become the great iron producing section of this continent when opened up to the markets by water communication.

Let the mandate go forth from the people that these water communications shall be made, and before the great enterprise, worthy of a great people, is completed, a hundred furnaces will be erected, where brilliant and prosperous fires shall light up the valleys of the Cumberland, Tennessee, Sequatchee, Coosa, Black Warrior, and Cahawba, producing annually 1,000,000 tons of pig iron, and adding \$40,000,000 to the wealth of the people, and in addition 5,000,000 tons of coal, one-sixth the annual product of Pennsylvania, can be mined and floated to market, which will add \$15,000,000 more to our wealth as a people. Here is an estimate of 6,000,000 tons of coal and iron to be shipped from these States annually, and this is merely the beginning, which, with our present facilities for transportation, could not be moved at all.

Mr. W. Mathieu Williams, well known as an English contributor to the Metallurgy of

Iron and Steel, says: "Ere long we, England, shall be large importers of American pig iron." With cheap transportation to the sea, pig iron can be shipped now from Tennessee, Georgia and Alabama, and sold at a profit in England, as the average price now is \$31 20 gold, or \$35 88 U. S. currency per ton. And the same is true in regard to coal, which, with water transportation to the sea, could be put in the English market at a cost of \$7 50 per ton.

Add to the natural resources of these States that of cheap transportation to the markets of the new world, and then they can compete successfully for the iron trade of the world.

Very truly,

GEO. T. LEWIS.

The Cotton Manufactures of India.

One of the most singular social phenomena of our time is the fact that in the chief producing countries of great staples, although they may contain a skillful population, the branches of industry which depend upon those very staples either do not lift their heads at all, or have to be sustained by all kinds of coaxing and pecuniary subsidy. Perhaps the most remarkable illustration of this fact is seen in the case of the cotton manufactures in British India. While the cultivation of the raw material, and the exportation of the same, thereon dependent, increased, in the five years elapsing between 1861 and 1867 to more than double, and, in the last named year, the quantity produced approached the highest estimate attained by the grand production of America just before the opening of the war, the manufacture of cotton there cannot be kept up without special aid from the mother country, notwithstanding the favorable circumstances that surround it, and the enormous home consumption of cotton yarn and fabrics.

Of the whole product of British India, amounting to about 2,300,000 bales of 400 lbs. weight, the 25 factories of the country, comprising 392,000 spindles and 4540 shuttles, consume only 77,400 bales, while, on the other hand, the importation of manufactured cottons amounts to 213,000,000 lbs. annually. The total cotton consumption of India is 620,000 bales per annum—an amount which when compared with the total of manufacture above given, clearly shows what a heavy share of work must be performed by the native hand weavers. Of the whole number of spindles, the Western provinces alone get 319,394, and 4199 shuttles, employing 8170 workmen, and consuming 62,000 bales of cotton. Bombay and its neighborhood have 9 factories and 279,000 spindles, with 4059 shuttles. In the Eastern country, at Calcutta, there are only 2 factories, which, with 42,500 spindles and 70 shuttles, consume a yearly supply of 6850 bales, while all the rest of India has but five factories, employing 30,000 spindles and 300 shuttles. Their consumption is only 5000 bales per annum.

All the East Indian factories are owned by joint stock companies, and only seven of them have, thus far, yielded their stockholders a

per cent. dividend. The rest, after several years of existence, have declared none.

Although strikes frequently occur in India, and, along with the fact that most of the workmen return to their homes, for at least 4 to 6 weeks of each year, rendering it difficult to build up a good class of reliable workmen, the condition of the latter in India, as a class, may, upon the whole, be considered favorable. The natives, who attain great skill in the management of English machinery, are generally directed by European managers and overseers. There are 16 men, usually, to every 1000 spindles, and 86 men to every 100 shuttles. The yarn produced is chiefly from No. 10 to No. 30, and the fabrics are the different kinds of the so-styled T-cloth and canvass.

The rate of wages by the day and by the job are about 50 per cent. less than in Europe. Thus workmen get per month:

On the cleaning machines,	10 rupees.
Girls on combing and carding.....	6 do
Girls on the forespinners... 8 to 11	do
Overseers for every four	
Self-actors.....	15 to 18 do
Spinners and Self-actors....	10 to 12 do

The production somewhat resembles the English, so that about $3\frac{1}{2}$ ounces of No. 20 thread are produced per spindle each day, and the rapidity of the shuttles is about equal to that of the German weavers.

The circumstances that militate against the favorable state of the case are:—1st. The high rate of the capital invested, viz.: about 40 rupees per spindle; 2d. The high price of motive power. All the factories of India are worked by steam, and not merely the coal, but the very water is costly; 3d. The great expense of employing European overseers.

Yet, even from the very closest consideration of all these circumstances, it cannot be discovered that the Indian cotton spinner is more costly than the English. When, in addition to all these facts, we remember that more than half the English cotton thread and manufactured goods now imported are made from the East Indian staple, and that the raw material used has to traverse a distance of 5000 miles to the place of manufacture, and then, to the point of production burdened with another duty, we arrive at the only rational explanation that can be given of the contrast between the Liverpool cotton quotations and the rates of the raw material, along with the cost of the manufactured goods in India. This status of the case is evidently unnatural, and forces upon us the fact that the chief condition for success in the cotton manufacture lies not so much in the capacity of the workman, as in the cost of the capital.

Many points of the above review apply to our own Southern States, and the remedy must be found in wiser legislation with regard to the tax imposed upon industry, the rapidity and safety of transportation, and the alleviations of all the burdens that retard labor.—*New York Mercantile Journal*.

A Lecture on the "Progress of Agriculture in the Last Thirty Years."

Delivered by M. GEO. VILLE, Vincennes, for the Season of 1868. Translated from the French for THE PLANTATION, by MISS E. L. HOWARD, Kingston, Ga.

[CONCLUDED.]

The rotation followed in this establishment is for a period of seven years, a considerable period, in an industrial point of view. Well, here is, according to authentic figures, what, with a rolling capital of \$85 the acre, has been produced: The first rotation, Winter wheat, gave thirty and one-third bushels the acre; the second, that is to say, seven years after, the return was thirty-four and two-third bushels, an increase of four and one-third bushels. But, truly, who can be persuaded to invest a rolling capital of \$85 the acre, to obtain, after seven years' labor, and the chance of loss on the side of Nature, an increase of crop of four and one-third bushels, and then pride themselves on what they have gained?

Spring wheat brings us to the same conclusions: The first crop was thirty-one bushels; the second crop was raised to thirty-six bushels.

In the rape, or colza, there was a diminution instead of an increase. From thirty-one bushels the acre, the crop was reduced to thirteen bushels. The best crops obtained were from the oats, which passed from fifty-six to seventy-three bushels.

I ask you, gentlemen, if, after such an example, one is authorized in sustaining the power of capital to better the condition of inferior lands in a short time? Are we justified in pretending there is an advantage in improving, in a measure, the kind of forage cultivated for raising or fattening cattle?

Must I support this example by another still more celebrated? I borrow it from a man whose name should be pronounced but with sentiments of the profoundest respect. I speak of Matthew de Dombasle. In 1825, already tried by reverses of fortune, Matthew de Dombasle persuaded that culture by manure and cattle could be made to yield advantageous results on poor land, made it a point of honor to furnish a demonstration of this to his contemporaries. He then set to work, and with a candor which cannot be too much admired, published every year the result of his experiments. After twelve years of obstinate struggle, what does he say? Matthew de Dombasle, his head blanched by years and crowned by public esteem, says to the agricultural world:

"I was mistaken; no, alternate culture is not an assured means of profit and progress; in spite of all my efforts I have not been able to pass the yield of sixteen bushels the acre for wheat, sixteen thousand pounds of beet-root, and eighteen and two-third bushels rape-seed the acre, and all my accounts of culture agree in loss!"

Ah! gentlemen, honor and respect to this man whose character was the height of honor. He is the first who, guided by superior considerations, has enlightened political economy as

applied to things of the soil. May his example be a guide to us and to all those who pursue the same career. Respect and honor to Matthew de Dombasle, who was not afraid to proclaim his defeat, in the hope he might save us from the like fate!

But you may say, the English practice protests against your conclusions?

English agriculture, which realizes such great profits, does not owe its superiority entirely to its numerous cattle and the power of its capital. For reply, I am embarrassed in choice. But I will confine myself to one example: Sir John Hudson, who, thanks to his agricultural success, has an opulent fortune, on a farm of 675 acres, he maintains 10 cows, 250 bees, 3,400 sheep, and in spite of the enormous quantity of manure which such a stock must produce, he every year buys \$5,000 worth of artificial manures, and \$9,500 worth of cakes, themselves equal to an importation of manure.

Consequently, the objection drawn from the English practice does not hold, and we finally arrive at this conclusion, that culture with manure alone, by the most skillful men, the highest authorities, and under the most favorable circumstances, is powerless to obtain large returns, and that, in these conditions, agriculture has before her but a limited horizon of progress and amelioration.

What are the practical conclusions at which we must stop? These conclusions are very simple. Agriculture is now in nearly the same condition as industry before the invention of the steam-engine. As soon as this was discovered, there was an energetic search made for oil, the working of which assumed every day larger proportions, machines multiplied, and industry saw opened before her a perspective of illimitable production.

The situation of agriculture is now exactly the same. There exist in Nature inexhaustible supplies of these primordial agents of fertility to which manure itself owes its good effects. Phosphate of lime is found in the most varied forms in all the countries of Europe, in France, England, Germany, Spain, particularly in the provinces of Caceres, Logrosan and Truxillo, where open deposits extend over a surface measured by the thousand feet.

Potash forms the chains of mountains in the shape of granite and porphyry. It can be economically and practically extracted. Potash still exists in the waters of the sea, from whence M. Ballard has taught us how to obtain it. Under certain conditions it accompanies mines of mineral salt in the form of chlorides and sulphates, as at Stassfurt, in Prussia, where there are deposits capable of supplying the consumption of all the countries of Europe for several centuries. Similar deposits have been discovered in Hungary; no doubt others will be discovered under similar geological conditions. Thus, potash will never be wanting in agriculture.

I need not speak of lime, which will never fail in the combination of lime and plaster.

Azotic matters are the only ones which now give any uneasiness, but this will soon cease.

The nitrate of soda from Peru has only been worked within the last twenty years for the fabrication of chemical products, but, doubtless, as soon as a large and certain market is opened, the deposits actually known, which extend over a surface of more than 80,000 feet square, will become the foundation of a very large industry.

In the tropical regions nitrate of potash is incessantly formed on the surface of the soil. But little has been imported in France because, until now, it has been used but for industrial needs; but with agricultural progress, this product will arrive from all parts.

As to sulphate of ammonia, considerable quantities can be obtained by modifying the method of making coke. To this source we must add still another, and more important one: when volcanoes are so far burned out as to throw up only steam, it produces sulphate of ammonia in enormous quantities, which may be extracted by making use of the heat of the steam which has brought this salt to the surface of the ground.

The only aqueous volcano of Travele, in the province of Volterra, in Tuscany, yields every day, according to Prof. Becchi, 3,000 pounds of it—one ton and a half! I can testify to analogous facts with regard to a large number of other volcanoes of the same origin.

You see, gentlemen, the sources of these new products are almost illimitable.

The practical conclusion is, we may use them in largely increasing proportion, while by their aid we command the fertility of the soil, and leave the, until now, impassable circle which inclosed us, while restricted to the use of barn-yard manure. The farmer gains by this change a liberty of action heretofore unknown.

From this we have a new doctrine, which may be thus expressed:

1. Give the soil more phosphoric acid, potash and lime than the crops take from it.
2. Give the soil fifty per cent. of the azote of the crops, because the air furnishes the difference.
3. Instead of having recourse to ill-fed cattle and seeking to improve forage crops, rely upon a permanent importation of fertilizers when working lands of an inferior quality, so as to obtain large results at once, so as to determine by the capital disposed of, and the contingencies arising from the proximity or distance of the market where the crops are sold, whether it is most profitable to raise meat or the cereals; whether to employ chemical fertilizers alone, or associated with barn-yard manure, the choice being indifferent.

But whatever is decided, special fertilizers must help barn-yard manure, their nature being determined by that of the plants composing the rotation.

Now, the inherent advantage from the use of chemical fertilizers is immediately apparent. It is the facility thus acquired of varying and regulating at will the composition of the manures according to the different wants of each plant, a power which we do not possess with barn-yard manure alone.

You may employ larger or smaller quantities of manure, but you cannot change the composition of it, while with chemical fertilizers you make to predominate at will azotic matter, phosphate of lime, potash, wherever the predominance is considered useful, and thus agriculture leaves the uncertain paths of empiricism to enter the sure paths of science, defining everything, giving account of all the terms of the problems upon which she acts, and which she has the ambition to solve.

Our century is now estimated differently by different persons. Here the blame is obdurate, and there the praise is without measure; some do not fear to pronounce the sad word decay, while others exalt the superiority of our civilization because all her efforts tend to favor the emancipation of the people.

Without wishing to make myself the arbiter of this conflict of opinions or the exaggerations of others, I cannot refrain from maintaining, in our social system, a place for the progress of agriculture, which, by so many different sides, touches the most vital interests of the country.

In giving herself the task of bettering the conditions which regulate the fertility of the soil, science has an unavowed ambition, which I will endeavor to show you. She wishes to seize the ties which attach the welfare of man to the culture of the land which nourishes him, and to discern the conditions which must be fulfilled in order to give the population the largest fund of happiness and security.

Look at the destiny of the most famous nations of antiquity. The Roman Senate well understood political arts; of what wonderful sagacity and patriotism did it not give proof? And yet, what has become of the Roman Empire, in spite of the resources of every kind which she drew from the countries conquered by her arms? What became, before her, of Assyria, Persia, Babylon? Reflect upon what was their agricultural system, and you then find, amidst many other causes, one of the principal reasons of their decay. Their method of culture was devastating; they drew from the soil continually and gave it nothing, or almost nothing.

Under such a regime the result was inevitable; the foundations of society or population were sapped, and gave way like the foundation of a building which is worm-eaten.

What happened to these Empires is the same that happens every day to those imprudent cultivators who export their harvest without returning to the earth the equivalent of what they have taken from the soil.

You may hold it for certain, gentlemen, that the day is not far distant when the discovery of the practical means of satisfying the law of restitution, which alone makes the fertility of the soil durable, will be placed among the most useful and important discoveries of our time; because after all, in the complex play of social interest, it is principally upon this law that the welfare and prosperity of the people depends.

Observe, gentlemen, what is the situation of France under its present condition.

I have said that of one hundred and eight millions of acres cultivated, the small farmers possess forty-nine and one-quarter millions. Now, in regard to the law of restitution, to what system are these forty-nine and one-quarter millions of acres submitted?

If they are confined to the formula, meadow, cattle, cereals, the small farmer is a veritable calamity, for he who possesses but two or three acres can have neither pasture nor animals. Can he follow a judiciously-considered rotation? Neither can he do that. What then does he do? Eight times out of ten, he subjects the earth to total impoverishment. We must then, by a more generally extended instruction, teach him that by persevering in this system he compromises the present and makes the future most uncertain. This is no idle question.

Forty-nine and one-quarter millions of acres are held by the majority of the people of the country. It is to this large majority who live by the sweat of the brow, I ask that light be given. Suppose that these forty-nine and one-quarter millions of acres now cultivated without rule, in violation of all the laws of fertility, be, on the contrary, subjected to the system of economy, which I have explained to you. What will be the consequence? At once to double the production of these forty-nine and one-quarter millions of acres; radically to change the economy of the country.

Our budget against which so much criticism is leveled, has passed two hundred thousand million! What must we do easily to support this? An improvement of from ten to twelve per cent. on our agricultural production, which surpasses fifteen hundred thousand millions.

These, gentlemen, are not vain exaggerations, or calculated effects of language, but truths which whoever loves his country and thinks of her prosperity should hold himself bound in honor to propagate? The old methods of culture are no longer possible in the Southern part of France, for the simple reason that the South is wanting in forage. The culture of the vine tends to increase this more and more, because of the high value of its products. But the vine exhausts the soil because the wine is almost entirely exported. How change this situation and re-establish the equilibrium? Shall we give to the vineyard all the manure which ought to be used on other fields? But that only changes the difficulty, for what will become of these fields?

With the new formula—permanent importation of chemical fertilizers—the law of restitution is observed. You are not ignorant, gentlemen, that a part of the *Agricultural Press*, yielding to very mean motives, endeavors to travesty the character of the principle which we seek to make triumphant. By persisting in this, they assume a very grave responsibility, for they injure one of the liveliest interests of our time.

In spite of this opposition it is not only a question of doctrine, but a duty to assert, with renewed energy, that the cultivation with barn-yard manure has ceased to meet our wants.

The small farmer cannot make the manure; the larger proprietor gains nothing if he uses barn-yard manure alone. Both should found their efforts upon a permanent importation of fertilizers, and this becomes a more imperious necessity when we have to do with shrubby cultures.

Thus, culture by chemical fertilizers alone, or in concert with barn-yard manure, is the solution of the agricultural problem.

Do what one may, the use of chemical fertilizers is a great necessity imposed upon us by the agricultural situation of our time and country.

Do you say it is impossible for this system to prevail by individual example? The most unfavorable case which can be opposed to it, will help me to prove the contrary.

I suppose a man to possess six or seven acres of ground, and yet is not able to advance sixty or seventy dollars for the fertilizers to treble his products.

What is impossible for the whole of the farm, is possible for a part; for the one-fourth or one-fifth of it. We will admit that he operates on only one-fifth, and we will generalize the operation: In five years, forty-nine and one-fourth millions of acres will have passed from a return of twenty to forty-eight bushels the acre. Can you not imagine to yourself the results of all kinds which will flow from this increase of production?

The path is open, gentlemen; the solution is found; you know the terms practice has pronounced. Do you wish to farm with large profits? Manure abundantly. The means are at your door; profit will always respond to your endeavors and crown your efforts.

See, gentlemen, how the doctrine of chemical manure is brought to the point sought; namely, to better the small farmer, and make it possible for each region of a country to have its own special culture, which is the progress to which we tend, and which the freedom of commerce makes a necessity to us.

Here, gentlemen, end our studies for this year. Let me believe that the idea which has brought us together will not vanish as we separate, and that each of you in the sphere of his influence will spread abroad the precepts whose practical value have been proved before his eyes, the success of which must result in lessening the price of all kinds of food, of supplying work to the needy classes, of extending to the interior the consumption of manufactured articles of every kind, and thus freeing the small farmer, who is represented by the majority of the country. Which of you, gentlemen, will refuse me his aid in attaining this end?

The rule to be applied in general conduct is to conform to every innocent custom as our social nature requires, but refuse compliance with whatever is inconsistent with propriety, decency, and the moral duties; and dare to be singular in honor and virtue.

[We are indebted to Mr. Chas. W. Greene, the efficient Secretary of the Agricultural Congress, for the following synopsis of the proceedings of the recent session of that body at Indianapolis.]

The National Agricultural Congress.

IMPORTANT MEETING—TWENTY-FIVE STATES REPRESENTED—THE CONGRESS FIRMLY ESTABLISHED.

Pursuant to announcement the Congress convened in the Hall of Representatives, at Indianapolis, Indiana, on the 28th May. As was to be expected, a Congress of Delegates who came together for the first time, unacquainted with each other, and with the views which were to be crystallized into resolutions as the basis of final action, the work of the first day was purely preliminary.

The hours of the morning session were consumed by the Committee on Credentials, whose report had, necessarily, to be presented before any business could be considered in order. During their absence from the hall, the time was improved by several gentlemen to recall personal reminiscences appropos to the occasion, and to informally suggest such measures as might properly be considered before the Congress. The report of the Committee, which was presented just previous to the adjournment for dinner, developed that there were in attendance delegates from twenty-one States; subsequent arrivals increased the number to twenty-five. The Department of Agriculture, the Agricultural Colleges, the State Boards of Agriculture, the State Societies and Associations, County Societies, the National, State and Subordinate Granges of the Patrons of Husbandry, the Farmers' Unions and Clubs, all had representatives present, earnest, thoughtful men, who had come hither at their personal expense to consider the grave and important questions now agitating the agricultural community. Of the personnel of the Congress the following extracts from the disinterested local papers will show that the body was something more than simply respectable. The *Journal* says:

"The Agricultural Congress now in session here is one of the finest looking bodies that ever assembled in the city. There have been many larger assemblages, but none to surpass it in average appearance. They are solid, earnest, thoughtful looking men who do their own thinking and have come together for a purpose. The purpose is a noble one, that of elevating and advancing the agricultural interests of the country, and whether any immediate results of the convention shall appear or not, it cannot be doubted that its intelligent discussions will be very widely read, and go far toward keeping up agitation of the topics with which it is most concerned. And agitation is what is needed, for out of that always comes truths."

The *Sentinel* speaks as follows:

"If the strength of the Agricultural Congress be estimated by the numbers in attendance

it falls short of expectations that its national pretensions justified. There are in attendance, not counting casual spectators, not much over two hundred persons. But the membership is made up of delegates chosen by societies in the different sections of the United States, evidently selected with strict reference to ability and fitness for the position. The personnel of the convention is of a high order, betraying little or no indication of political elements, but representing largely the class of solid, practical farmers, well sprinkled with men of thought and science from the agricultural schools and colleges of different States and counties. The sincere aim and purpose of the meeting is unquestionably to secure organized action for the promotion of the great cause of agricultural industry."

Of the political complexion, the *Sentinel*, in its issue of the 30th, says:

"How the Philadelphia *Press* was able to speak so positively about the character of the Agricultural Congress is one of the mysteries. Its issue of the 28th says: 'In the Convention which meets to-day at Indianapolis the political will largely predominate over the agricultural.' The *Press* was either wholly mistaken, or else its sagacity far exceeds that of parties on the ground. If there has been the least political taint in the Convention, it has been too subtle for visual observation."

This extract is suggestive of the manner in which opposition to this movement is to be developed, if at all.

It was evidently the sense of the Congress to make haste slowly. It was appreciated by all present that the eyes of the people at large—not alone the agriculturists—were turned upon them, and that their expression upon the vexed questions before the country was awaited with great anxiety. Thus feeling, they preferred that the early hours of the session should, apparently, be unproductive of results; that the committees who were charged with digesting the crude thoughts of individuals should have sufficient time to thoroughly discuss and consider, so that their expressions should be concise and yet comprehensive.

The question which it was evident was to be the leading one, expressed in general terms as the "railroad question," was divided into two branches, viz.: transportation—in its general sense—and the railway system. Separate committees were appointed, and the members of them selected with great care, so that every view of the subject might be fairly taken. The report of the Committee on Transportation was presented by Hon. W. O. Flagg, of Illinois, and ordered printed, and was made the special order for 4 o'clock of the second day. When it came up it called forth an earnest but temperate discussion. The debate developed what had been anticipated, that the railways had their special interests ably represented on the floor, and that their policy was apparent acquiescence with the views of the farmers, and to defeat any positive expression against them. They soon discovered that the members, as a class, had their own ideas upon the subject, and that

the committee had very nearly expressed them. We give the resolutions in full in the general report of proceedings.

The Committee on the Railway System having the advantage of listening to the discussions we have referred to, came in at the evening session with their report. It was read slowly and deliberately by Gen. William H. Jackson, of Tennessee, chairman of the committee, while every member listened with intense interest and almost breathless silence to its expressions. It had been anticipated that its presentation would call forth a spirited discussion, and several members had carefully prepared themselves therefor. But the committee had done its work so well, and had so evidently expressed the real sentiments of the Congress, that the calls for "question" came from every part of the hall, and the report was adopted without a dissenting voice. We believe that this report, which concedes to the railway companies, and to corporations generally, every just right, and yet demands, in positive terms, the reform of abuses which have crept into the system through lax and corrupt legislation, will strike the country at large with telling force.

The final section of the report prescribes the remedy—the only practical one—for the evils complained of to be "the thorough organization of the farmers of the country, in local, county and State organizations, for the purpose of reforming the great abuses, and dealing out equal and exact justice to all men."

Here is the antidote in a nutshell. Such organization is needed, not for the purpose of aiding any present political party, nor for the formation of new parties, but to enlist the yeomanry, and all men of integrity, for the appointment to official station of the *best* men of *either* party—men of integrity, whose personal character shall be beyond reproach, and who shall legislate and adjudicate not only this but all other national questions with a statesmanlike regard for the general welfare.

The subject of further land grants in aid of the Agricultural Colleges was discussed at the morning session of the first day. Dr. Daniel Read, of Missouri, and Col. George T. Anthony, of Kansas, ably presented both sides of the question, and it soon became apparent that there was no hope for the adoption of the majority committee report, which called for a recommendation that Congress should enact the bill now before them. The general feeling of the delegates was, not of antipathy to the general purposes of the Colleges, but that they had failed to meet public expectation, (perhaps because their establishment anticipates the condition of public opinion to appreciate them,) and that the land grants heretofore made had been disposed of in many cases under circumstances which savored of jobbery—at best had been very badly mismanaged. It was further evident that the legislative bodies, both State and National, are regarded with great distrust by the people, as now constituted, and that further land grants for any purpose will meet with a united opposition, so long as

reason for such distrust exists, from the people at large.

The report of the Committee on Meteorology and Crop Reports, presented by Dr. R. J. Spurr, of Kentucky, re-indorsing Com. Maury's International system of reports; endorsing the value of the Signal Service as relating to agriculture; setting forth the necessity for accurate crop returns, to be published at stated regular intervals, and to have prompt distribution throughout the country, and calling upon Congress to increase the appropriations for such purpose was adopted unanimously.

The Committee on Necrology, through its chairman, Dr. Bracken, of Missouri, reported memorial resolutions on the death of Com. Maury, Vice President of the Congress for Virginia, and Mr. H. N. McAllister, of Pennsylvania, a member of the Congress at St. Louis. Other subjects were presented, which will appear in the proper place.

At the night session of the second day an election for officers for the ensuing year was gone into. A committee of one from each State represented had been appointed to make the nominations for general officers, and reported that they had unanimously agreed, as follows: For President, Gen. Wm. H. Jackson, of Nashville, Tenn.; for Secretary, Chas. W. Greene, of Jackson, Tenn.; for Treasurer, Joseph Poole, of Attica, Ind.

The following Vice Presidents were elected by the delegates in attendance. Under the Constitution it becomes the duty of the President to appoint and fill vacancies. He very much desires that nominations shall be made by the societies of the different States, of such gentlemen as will take an active interest in the promotion of this important work:

Vice Presidents: Alabama—C. C. Langdon, Mobile; California, Col. C. C. Younger, San Jose; Georgia, O. H. Jones, Atlanta; Illinois, A. M. Garland, Springfield; Indiana, Gen. Sol. Meredith, Cambridge City; Kansas, J. K. Hudson, Wyandotte; Kentucky, Dr. R. J. Spurr, Lexington; Minnesota, Hon. Wm. S. King, Minneapolis; Missouri, Hon. Norman J. Colman, St. Louis; Mississippi, Dr. M. W. Phillips, Oxford; Nebraska, Governor Robert Furnas, Lincoln; Ohio, J. M. Milliken, Hamilton; Pennsylvania, Hon. A. Boyd Hamilton, Harrisburg; South Carolina, Winborn Lawton, Charleston; Tennessee, C. W. Charlton, Knoxville; Vermont, O. S. Bliss, Georgia; Virginia, Col. H. E. Peyton, Waterford; West Virginia, H. S. Walker, Charleston; Wisconsin, Eli Stilson, Oshkosh.

The nomination of Gen. Jackson was very much to his surprise, and the election unexpected. Although it would have been his preference that the selection should have been made from another State, under the attendant circumstances he did not feel at liberty to decline the honor. His inaugural address will be found embodied in the general report.

That the Congress is an established fact, and that it enjoys the confidence of the entire agricultural class is clearly evident. If from no other consideration than that of gathering

together delegates from the different parts of the country, where diverse views may be harmonized, and where the excrescences of local prejudice may be rasped away by the courteous amenities of social intercourse, this organization would be productive of incalculable good. But it amounts to far more than this. Composed as it is of delegates from an extended constituency, gathered from so many sources that prearranged combinations are impracticable, remaining together but long enough to give expression to the opinions of the respective constituencies, and having no financial resources sufficient to invite the rapacity of professional manipulators, we obtain through this body a candid expression of the prevailing public opinion upon the subjects presented.

Its work is but just begun. The Vice Presidents have been selected solely in view of their capacity for the work before them, and because of their known earnestness in its behalf.

It must, because of its pre-eminent necessity, be recognized from this time forth by the local associations.

The Constitution has been so amended as to give representation to every organized society, whether its membership number ten or ten hundred, and the assessment fee has been made uniform at five dollars each. This assessment becomes necessary to provide for communication between the thousands of societies, and the sooner it is provided, the more rapidly and effectively will the work be performed.

No measures for personal benefit have ever been considered, and never can be under such a basis of representation as now exists. The active co-operation of every friend to agricultural improvement, and to legislative and judicial reform, is much to be desired.

Good Advice.

We publish with great pleasure the following extract from an address recently issued by Mayor Huff, of Macon, Ga., to the people of upper and lower Georgia, in relation to the State Fair.

The address is full of wisdom and plain practical good sense, which applies not only to Georgia, but to all the Southern States. We heartily wish that in every State of the South there were a Mayor Huff, who had the intelligence and capacity to compose, and the manliness to utter the sentiments of this address:

That transportation which fosters and encourages our improvidence while it depletes our pockets, may be the transportation least of all others wanted in this country. And the objections now so strongly urged against our railroad systems might not be entirely overcome by these proposed water lines. It is not, however, the practicability of these grand schemes for reducing freights that we must stop now to consider—for no matter how feasible they may be, Georgia is in no condition to

wait their completion. The emergency—bread—is upon us, and we must go to work, and go to work to-day. We must teach our boys, by precept and example, that the great virtue of life and the necessity of the age is to be found in the truth of the old Latin maxim, "*Labor omnia vincit.*" The people of Georgia should never be dependent upon any line or any system of transportation for the meat and the bread, the hay and the fertilizers used upon their farms. Such a policy will bankrupt and starve out any people in the world. Show me the man with a fat smoke-house and a well filled barn, and I will show you one who is not affected by low-priced cotton or high transportation. On the other hand, point me to that farmer with a lean smoke-house and an empty corn-crib, and I will show you a miserably poor and mistaken wretch, whose dependent and destitute condition can never be reached by high-priced cotton, or relieved in any way by cheap transportation. The truth is, we have been betting our bottom dollars so long on three fatal cards, called "credit," "cotton," and "caterpillar," that we now have nothing left us but our mules and lands; and in seven cases out of ten these are pledged to some warehouse firm for supplies to make this year's crop with. And yet, in the face of all this crouching poverty and embarrassment, we learn from the newspapers of the country that more land is planted in cotton this year than last, or even any year since the war. No wonder, then, that we should be crying out for more transportations.

Fifteen years ago, when I first commenced the produce business in Macon, my little orders for grain and meat seldom went farther west than the fertile hills of Cherokee, Georgia, and the narrow valleys in East Tennessee. I had time then to write and send letters for these supplies and wait the return of quotations before buying. I, with other merchants, purchased there, at our leisure, all that was necessary to supply the wants of Middle and South-western Georgia. Now we send our immense orders by telegraphic wires to the rich fields and broad plains of Illinois and Missouri; and if, by any chance or ill luck, a railroad bridge is burned or a transfer boat is sunk and a little blockade occurs *en route*, a panic ensues, and a meat, bread, and hay famine at once threatens every man and beast south of Chattanooga. This is our miserably poor and helpless condition to-day—fearful and unreasonable as it may appear to outsiders. But that annual deficiency of fifty millions of bushels of grain in the four States of Georgia, Alabama, Florida and South Carolina, commented upon so gravely by the late Canal Convention in Atlanta, tells the whole story. We have suddenly awakened, as it were, from a deep sleep, and discovered the unwelcome fact that we are a poor, thriftless, non-producing, all-consuming, dependent people. And just so long as the farmers and planters of Georgia pursue their present mad policy of buying fertilizers to make cotton to buy corn, bacon and hay with, and then pay two per cent a month for money from April to November

of each year to run this wild schedule, just so long will they be pitiable beggars and borrowers at the doors of transportation offices and Georgia shaving shops, provided a worse fate does not speedily overtake them.

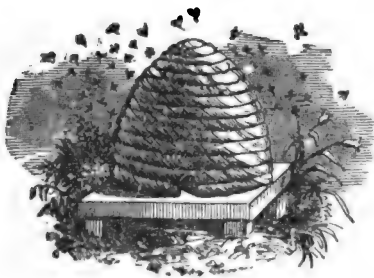
The truth is, the whole country has become one common counting room and huge gambling shop. What we once did with the ax and the hoe, the plowshare and the reaping hook, we now seek to accomplish by strategy and chance, credit and speculation. And we must, sooner or later, come back to first principles, or we must perish. We have too many able-bodied young men in shady places; too much tape-cutting and pin-selling and too little cotton-chopping and hay-curing; too many yard sticks thrown around loose on smooth-top counters and not enough hoe-handles and plow-stocks; too many law books and lager beer barrels in proportion to the rail-splitting and ditch-digging; too much foolish fashion and foppery, and not enough sledge-hammers and saw-horses—in a word, too much *wholesale idleness*. Georgia has to-day, buried in the rich bosom of her varied soil and precious mineral beds, greater wealth and grander results than can ever be worked out by canal projects or Congressional enterprises. And how is it to be done? Not by dreamy theories and mythical plans, but in talking corn instead of canal—in diversifying and developing our own vast resources—in writing more about home effort and less about foreign immigration—in planting less cotton and manufacturing more yarns. In this, and this only, lies the great secret of Georgia success—agricultural as well as financial and commercial. We are immensely rich in resources, but miserably poor in the handling of them. What we want is *work*—honest, hard-fisted, intelligent, well-directed toil, labor and application in developing and utilizing what we have here at home rather than so many spasmodic efforts to bring from abroad that which we *should not buy*. Our poverty, like our pride, is the result of misapprehensions and mistaken ideas of ourselves, of our country and of each other. The abolition of slavery in the South has developed a vast world of sickly, sentimental, lazy, indolent, stupefied, inert and unapt population—a population of young and middle-aged men, some of whom have known better days. These men put on old store clothes, hang around dirty grogshops and dingy hotels, smoke cheap cigars and drink mean whisky, affect old habits and anti-war style, talk politics a little and curse destiny and free negroes more, fret and fume over the result of the late war, write and sign up mortgage liens on their cotton crops before they are planted, pay two per cent. interest on money for nine months in the year and then promise to pay annually in the fall more money per acre for commercial manures to scatter over their lands than some of them originally cost.

And, finally, when inattention to business and general bad policy and mismanagement have brought them and their State to the extremity of desperation—when ruin and bankruptcy stare us all in the face—we issue, pro-

clamations, call public meetings, invite distinguished gentlemen from abroad to come here and sympathize with us. We meet in banquet halls, drink much champagne and discharge more gas over the great and absorbing questions of canal schemes, Congressional aid and cheap transportation, than was ever expended by our forefathers in discussing the Declaration of American Independence. And what does it avail? Will these idle and extravagant demonstrations ever work out the great problem of Georgia independence? Not! Never until labor becomes popular will money get easy. Never, until we feed fancy less, and learn to fatten chickens and hogs more, will want disappear and plenty step in. When these plain secrets of life shall have been learned, when the wild mania for speculation shall have departed from our farm houses and plantations, when our planters shall learn from experience to abandon Wall street brokers and "cotton futures," and come to deal more directly in the productions of square little "spots" of potatoes and corn, when agriculture shall become the ruling feature and controlling interest in our State—then, and not until then, will we become an independent, prosperous and happy people. And we have here in Georgia all the elements necessary to this great end. Here God has blessed us with everything essential to the prosperity and growth of man or beast, if only worked out. Everything, from a chicken and a churn to a cotton field and a coal bed, from a ground-pea patch on the sand hills to a gold mine in the mountains. These are among the rich, rare and multiplied resources of Georgia; these constitute our strength, our refuge and our power.

Think of it, farmers and planters of Middle Georgia! Here we are, in the heart of the Empire State, the boasted owners of lands without stint, blessed with a climate and soil where two crops of grain or two of potatoes, or one each of pea-vines and hay can be successfully grown on the same land the same year, and yet we go to Baltimore to buy guano to make a little cotton to sell in New York to get money to buy hay, oats and corn away out in the rich States of Kentucky, Indiana, Illinois and Missouri. And just so long as we are the voluntary patrons of produce dealers, heartless rings and pampered monopolies, such as now own and control, operate and direct, our only lines of trade and transportation north, south and west, just so long will we be fit subjects for lien-drafts and homestead laws, mortgages, and repudiation. The South must work out her own independence. The remedy is ours, if we will only apply it. Too often have we been beguiled by plausible schemes for great improvements and financial relief. Let us no longer be lulled into a false security by any promises which can be made, outside of our harvest fields and hog pens, our hay patches and cane mills. It is here we shall find it. To this end the State Agricultural Society throws open her Exposition halls, offers her premium lists to the public, and invites competition from every section of the country.

The Apiary.



Improved Breeds of Bees.

BY D. L. ADAIR.

Until within the last dozen years, a bee was a bee, and no one thought of one bee being better than or different from another. Just then the Italian bee stepped in and revealed the fact that the law of variations applied to insects as well as to higher animals and to vegetables; not only that the Italian bees, as a class, differed from our native bees, but that the Italians differed among themselves, and our common bees were not all alike.

Now this condition of things, instead of being a difficulty, is just what we want in order to get superior varieties, and if taken hold of properly will result in a very few years in doubling the utility of this already most useful insect.

Now, the only use we have for bees is to produce honey, and therefore we should cultivate such instincts as will contribute to that end.

FECUNDITY OF QUEENS.

A small colony of bees cannot gather as much honey as a large one, therefore fecundity in the queen should be increased, and the swarming instinct suppressed. It is estimated that the ovaries of a queen contain the germs of about 500,000 eggs, and when they are laid she dies. If the laying instinct can be cultivated so that all of these can be deposited in one season, instead of extending the period over three to five years, as is generally the case, it is evident that a great advance will be made. But if the swarming impulse is retained, and the colony is continually being disorganized by swarming, the gain will be of doubtful value. In every apiary the owner can point out certain colonies that are continually more populous than others. Such should be selected to breed from, and all unprolific queens should be destroyed and their places filled with others produced from eggs of the prolific, although the infertile queen should be Italian, and even imported. In order to increase their productiveness, when your young queens begin to lay, keep them at it, and never let them stop a day if you can prevent it. If the natural supply of honey gives out, feed—feed all the time and never let the queen be at

a loss for empty cells in which to deposit her eggs. Throw away your hives of 2,000 cubic inches capacity and put your bees in hives of double that size; for you cannot put a gallon in a quart measure, and so long as you keep your bees so pent up, the queen will be prevented from developing her full capacity. Raise your queens at the season of the year when your colonies are the most industrious and populous, and from the youngest queens, that they may inherit the vigor of youth, and not the exhaustion of old age.

DEPRIVING BEES OF STINGS.

Next to fecundity, perhaps, the most desirable thing is quietness. If the bee could be deprived of the stinging instinct, a new impetus would be immediately given to bee-keeping, for a large majority of persons are deterred from engaging in the business through fear of being stung, while many who have bees fail to give them the proper attention from the same cause. Fortunately, we find that this instinct varies in different colonies. The gentleness of the Italian bee was urged as its principal recommendation by the first introducers, and many queens that have been imported produced a gentle progeny, but only under favorable conditions, while others, with equal claims to purity, were vicious and unmanageable. The gentleness of the Italian bee is not docility; it is more of a stubborn cowardice. When disturbed they immediately retire to the recesses of the hive, and instead of sallying out to drive the intruder off, they stick themselves tenaciously to the sheets of honey and brood, as if determined to defend their stores behind the walls of their castles. The American bee, in all its varieties, if it fights at all, is willing to come out of its entrenchments, and when subjugated it can be driven about at pleasure. Many of them show no more disposition to sting than do the gentlest of the Italians, and if it can be shown that they vary to as great an extent in productiveness, I believe a more desirable breed could be produced from them.

At the last meeting of the North American Bee-Keepers' Society, the opinion was expressed that the existence of bees depended on their stings, and that they could not be entirely deprived of the instinct to use them. The assumption can hardly be true, for all of the indigenous species of bees of America, North and South, (that is, the *Meliponas* and *Trigonas*,) are stingless, and many races and varieties of them have not even the protection of a hive, gum or hollow trees to shield them, but hang their combs and stores on the limbs of trees. Still they have continued to exist and prosper.

In one instance, I had a natural swarm of bees to come out, whose queen's wings were clipped. I had a number of them sting me on the hand, and on examination found that their stings were very small, and many of them so soft that they could not penetrate the skin. If wide and careful observation was made, other instances might be discovered of a tendency to dispense with a useless appendage.

About the same time I had a colony without wings. While young they could build comb and nurse the young as well as if they had wings, but when they became old enough to go out to gather honey, of course they were useless, and as but few could be seen crawling around the outside of the hive, it is to be presumed that they wandered off in the grass and were lost. The mother of them had her wings clipped short, as it was my custom at that time. If the wingless condition of the mother caused the same condition in her offspring, it would indicate a means of removing the sting by clipping the sting of the queen.

SWARMING.

In a state of domestication, there is not only no necessity for this, but it is positively injurious. With proper management it can be prevented, and if prevented for a time, long or short, it would disappear as other instincts do, under domestication. We would then want to remove the antipathy that one queen has to another, so that several could be kept in the same colony. In modifying the temperament of the bees, the queens would no doubt share in their civilization.

Mr. F. Smith, of the British Museum, inclines to the opinion that a colony of *Trigona* contains several queens at a time, as the multitudes inhabiting some nests are too great to be all produced by one female. The *Melipona* and *Trigona* are indigenous to Mexico and Central and South America. There are many species of them. The colonies of many are very numerous. They are stingless. Some build in the hollows of trees, others in the ground; some suspend their nests from the limbs of trees, and at least one species constructs its own hive of clay, it being of very large size. (Smith.) If these tropical bees can exist under such circumstances, why cannot our *Apis mellifica*? And when perfectly domesticated and made by cultivation as harmless, why cannot several fertile females inhabit the same hive?

RED CLOVER.

There is, perhaps, no plant grown that yields honey more abundantly than the red clover, but on account of the long tubular corolla in which it is secreted, it has been up to this time inaccessible to the honey bee. When the Italians were first introduced, it was stated that their tongues were long enough to reach it. Except in rare instances, the statement has failed to be verified. Occasionally, on the second crop, some flower-heads fail to develop their normal size, and a few bees work on them, but I have yet to hear of their doing so to any great extent. Mr. Dadant, of Illinois, suggests, in the "Annals of Bee Culture," that by proper selection of seed from only such heads as the bees have been seen to visit, and by repeated selections from sowings on poor ground, a variety of clover might be produced with flowers so small that the honey would be accessible to the bees. The suggestion is a good one, but it would be better if we could increase the length of the proboscis of the bees.

I once had a colony of gray bees that worked freely on red clover whenever it was in bloom, and stored great quantities of honey gathered from it, while no other bees resorted to it. I Italianized them, and lost the opportunity of profiting by the encouragement of so valuable a variation, and at the same time spoiled the most valuable stock of bees I ever had.—*Live Stock Journal*.

Sunshine in the Apiary.

It has been so frequently urged that the hives be shaded from the sun, that it is scarcely necessary to repeat all the advantages of doing this. All who have had anything to do with honeycomb are aware that the heat will very soon reduce it from its perfect form to a mass of wax, and understand how the rays of the summer sun, if reflected for any length of time upon the hives, will so affect the combs that they will sometimes drop from the frames, and thus cause disaster to the swarm, while a less degree of heat will render them unsafe to be handled; and especially is this true of the new combs. An excess of sunshine on the hive is productive of other evils, sometimes resulting in the absconding of the swarm. Yet this side of the subject has been so repeatedly placed before the attention of bee-keepers, that it has led to an extreme care in some cases, and a caution in this regard will now be timely, as there is less danger in changing the position of hives now than there will be later in the season.

The shade of evergreens is too dense, as their foliage is heavy, and, in spite of the summer temperature, retains sufficient moisture of the dews and rains to make a location near them undesirable for the bees. The effect of too much protection from the sun may be noticed early in the morning, when the bees will be seen to be tardy in their appearance, and even then they will not come out with a rush and vigor that may be customary of the inmates of a neighboring hive that has more sunshine. Let the hive be so placed that the rays of the rising sun may rest upon its entrance, and the watchful and sensitive bees will seek the dew-laden flowers at an early hour. A tree or shrub should be near, and in such a position as to protect the hive from the rays as they penetrate the atmosphere in more direct lines, toward the close of the morning, and until the day begins to wane. In this way the hive will be protected, and not sheltered, as at times the sunlight does no harm, but acts as a stimulant and health-giver to the inmates.

I have seen hives placed against the eastern side of a house, and when the shadow of the house did fall upon them, they were treated to a transition from one extreme to the other. Again, I have noticed them facing the north, with a tight board fence on the south, which is a decided improvement on the former. But a bee-house, a fence, or other artificial protection cannot be so good as that afforded by the shade of a fruit or forest tree.—*Ellis, in Chicago Tribune*.



The Stock Yard.

Colic in Horses.

BY D. L. PHARES, M. D.

Symptoms and Diagnosis.—The most prominent symptom is intermittent spasm of the muscular coat of those parts of the large intestine known as the cecum and colon. Pain is constant, but the spasm recurring every few minutes, renders it intolerable. The animal looks round at the side or flank, runs violently a short distance, lies down and rolls, or falls suddenly, and sometimes springs up suddenly, and may even wound its own belly by violently kicking it. In the intervals between the paroxysms the pain is comparatively slight, so that the animal may nibble grass. The disease must be distinguished from gastritis, enteritis and peritonitis, with which it has some symptoms in common. In the latter two the pain is uniform and constant, the belly hot and extremely tender to the touch, and the pulse accelerated, while in colic the pulse and temperature of the belly are little affected, and pressure on the belly relieves the pain. The attack of colic is also more sudden than the other affections named. In these the horse may kick toward his belly, as in colic, but is careful not to hit it. In gastritis there is less pain, less distension of the belly and flanks, less inclination to fall down, roll or run, and all his motions are lower than in colic. In gastritis the horse puts his mouth on the ribs nearer the shoulder; in colic nearer the flank. In gastritis nausea, distress and disgust are sometimes manifested by everting the upper lip repeatedly in a ludicrous way.

In spasmodic colic we find all the symptoms above indicated greatly intensified, except that there is no very great distension, while in flatulent colic the agony of the paroxysms is less, but the distension of the belly extreme. The signs of colic from impaction are the same as in the last, but the attack is preceded for some days by constipation, the feces being voided with difficulty in small, hard, dry lumps, not unfrequently being coated to some extent with tough mucus.

Treatment.—One remedy I have used successfully for twenty years in all the varieties of colic, and it happens to be adapted to all. I have repeatedly published this remedy, and it

is now extensively used in most of the States. One tablespoonful of powdered nux vomica, in a gill each of warm water and whisky, will cure every case if promptly given. Where there has been delay, and the stomach loaded with other things, a second dose may be required in twenty minutes. If the powdered nux vomica cannot be obtained promptly, saw or rasp up one or two of the large buttons, and give as above. I would not give more than two large buttons, or two tablespoonfuls of the powder. Brandy, or any spirit equal in strength to good whisky, may be substituted for the latter; but the spirit and warm water are both very important in developing promptly and effectively the virtues and powers of the drug.

Tartar emetic is adapted to all the varieties of colic, and is highly recommended by General W. L. Brandon as a sure cure. A tablespoonful is ordered, and not more than two doses to be given within an interval of an hour. The antimony relaxes the whole system, and sometimes sickens the animal very much.

Sulphuric ether, in doses of two ounces, is a good remedy in spasmodic or flatulent colic. Chloroform, in like dose, is much more certain and prompt. It should be given in thin mucilage or milk. An ounce of laudanum may be combined with it with advantage in some cases. Although the first, perhaps, who had the temerity, as it was considered many years ago, to administer chloroform internally, I do not appreciate it so highly as many others do. I have seen animals considerably damaged by drenching with it, when awkwardly done. Besides it intoxicates the animal considerably.

On one occasion, when far from home, my horse having flatulent colic, I gave him an ounce of laudanum and two ounces of bi-carbonate of soda in a bottle of water; then tied tobacco on the bit, mounted and rode on. The colic was soon cured. Another good remedy for this variety is powdered grains of paradise and caraway seeds, each one or two teaspoonsful and twenty drops oil peppermint or an ounce of the essence, given in thin warm mucilage.

In Europe, veterinarians give for spasmodic colic sulphur ether, one ounce; laudanum, two ounces; compound decoction of aloes, five ounces. Mix and give every half hour until relief is afforded. Another good remedy they use is aromatic spirit of ammonia, one ounce and a half; laudanum, two ounces; tincture of ginger, one ounce and a half; hot ale, one

quart. Mix and give every hour. At the same time diligently apply hot water to the abdomen, and by epema administer as much water at 100° Fahrenheit as the bowels will hold, without using too much force.

In England, the following is also highly commended in both spasmodic and flatulent colic: spirit of turpentine, four ounces; linseed oil, twelve ounces; laudanum, one ounce and a half. Mix and give every hour till the pain ceases. Warm water enemata often brings away vast quantities of gas, and thus relieve. Sometimes, however, the bowel is folded in such a way as to prevent the escape of gas per rectum. The only remedy then, if the distension is enormous and unyielding, is in puncturing the bowel by plunging in a small sharp blade, two inches in front of the hip bone, on the right side. The exact point to puncture varies a little with the size and form of the animal. I have seen this fail only once, and succeed several times.

When the bowel is impacted with dry feces, anterior attempts at purgation would be extremely dangerous. The anti-spasmodics and anodynes may be thus introduced, but proceedings for removing the obstructions must be wholly a posteriori. In some of these cases a patient use of the syringe will be required, with large quantities of warm water often repeated, till the obstructing mass is softened and evacuated. The water must be injected copiously, and when I say copiously, let it be remembered that the large bowel of the horse will hold twelve gallons or more.—*Field and Factory.*

Corns.

The prevailing and accepted definition of corn is an erroneous one, viz.: that of its being a bruise between the posterior extremity of the coffin bone above and the hoof below, by which extravasation of blood is said to ensue. It is nothing of the kind; bruising of the sole does happen in cases of flat-footed horses, while their feet are made still flatter by shoeing and bad management, and in such cases it is possible for the sole to bear on the shoe, fix it at different parts, so as to produce injury to the bone and intervening tissues, when pain and rapidly changing complications follow. In the case assumed above, however, we have not the production of that which has received the name of corn. Corns occur to horses with the best of feet, the common cause being the worst of shoeing. The seat of corn is in the laminated structure at the angles of inflection, or, as may be better understood, the extreme point of the heel. They happen in a similar way under fast exertion that a blister does to our heel under hard marches. The ecchymosis (blood stain) which follows the injury, and which is called the corn, is nothing else than an after-effect, due to the gravitation of the blood-stained serum which is exuded. The corn is a reality; it consists in a horn tumor at the angle above indicated. These tumefactions reach to various proportions, from that of enlargement and increased density of the

common horn lamina to their obliteration, and in the place an intruding growth of smooth horn more dense than that of any part of the hoof normally. This effect of nature to fence out and strengthen as man mutilates and weakens, offers a warning lesson to those who cut and destroy the sole of the hoof; we find that the more it is scooped away, and the external cavity deepened, so relatively does the intrusion increase upward, the tissues and cartilage making way by their becoming absorbed. Being injuries, the corn disappears like other bruises when the cause that produces and keeps them up is removed, less the consequences of protracted injury that may remain. I never pare these (so-called) seats of corn, and when the injury has been done, and more or less extensive blood-stained marks appear, I no more think of cutting and exploring than a surgeon would cut into a black bruise seen upon the skin of his patient. I simply shoe feet with corns just as I have directed shoeing to be done, and relieve the horse at once. In other words, the treatment of corns consists in a properly applied system of shoeing.

PROF. JOHN GAMGEE.

Preventive and Remedy for Hog Cholera.

A correspondent of the *Prairie Farmer*, who has had large experience with swine, says the following are reliable:

Preventive.—One peck wood ashes, four pounds salt, one pound each of black antimony, copperas and sulphur, quarter of a pound saltpeter. Pound, mix thoroughly and moisten enough to prevent waste; put in a trough in a dry place where the hogs can at all times eat as much as they please of it. I have strictly followed directions and had no cholera.

Remedy—It is: Sulphur, two pounds; copperas, two pounds; madder, two pounds; black antimony, half pound; saltpeter, half pound; arsenic, two ounces. The quantity is sufficient for one hundred hogs, and is mixed with slop enough for a few doses all round—a pint to each hog. Each time I tried this I had about fifty head, and not one died that was able to walk to the trough and drink.

THRUSH.—I have successfully treated cases of thrush in the following manner: Clean out the foot thoroughly; then take two tablespoonfuls of salt, and saturate with creosote; then pack the open spaces each side of the frog with the salt; cover with tar and fill with oakum to keep the packing in place; renew the dressing in three days; keep the feet in a dry place. Thrush is brought on by allowing animals to stand in foul places.—*Vet. in Cultivator and Country Gentleman.*

A correspondent of the *Prairie Farmer* writes that ticks may be kept from sheep, and even driven from them, by putting sulphur in their salt once a month. He keeps lice from his cattle, horses and hogs by the same means. If lice trouble hogs, he puts sulphur in their food. If chickens are troubled with them, he puts sulphur in the food, and sprinkles it in the nests

The Poultry Yard.

How to Commence with Poultry.

The above question is raised in a poultry paper. Shall the breeder start with eggs, ordered a long distance, perhaps, and sent by express, or had he better buy fowls at once?

Assuming that the eggs will not be harmed in transit, or exchanged on the way for common or low priced eggs, and that the fowls will also escape any like mishaps, (though it is said that such things *do* happen every now and then,) the question is one which will not long puzzle a business man—that is, one possessing the capital requisite for the pursuit in which he proposes to engage, and the general qualifications for its judicious investment.

If the inquirer is a business man after the above definition, let him buy the fowls at once. He gains a season's profit by it, and that is very important. If a man is qualified at the start for his calling, and does not need to feel his way and educate himself up, there is no business wisdom in beginning at the very bottom and plodding along like a child learning to walk. And the advice applies to most other pursuits as well as to poultry breeding. Any calling which in its nature depends on capital and the skill to use it wisely, may as well be placed on a strong basis at the start, one that will command confidence and respect. Patronage is then attracted at once, and largely because the party or parties show confidence in themselves. It is necessary also, in order to compete with established rivals in the same business. A newspaper in New York city started in the modest way in which the *Herald* and *Tribune* were started, but with the expectation of competing with them *now*, would stand a poor chance of growth.

But if the proposed breeder is without capital, then the other course becomes a necessity. Eggs cost less than a trio or more of fowls. Final success *may* come from investment in a single dozen, but it will take time, and simply because "time is money," is it wise, where cash in hand can be controlled, to start on a liberal scale. There are, too, some risks in ordering eggs which do not pertain to fowls. They may be broken, or their fertility shaken out of them by reckless handling. They are more likely to be delayed in transit than living fowls. They are liable to accidents and failures after being received. The chickens, when hatched, may die prematurely. But when you get a mature pair or trio of fowls, you have, practically, eggs also—good eggs—subject to none of the mishaps of transportation. If you buy a dozen or two of fowls, or a large flock, with a view to breeding on a large scale immediately, the magnitude of the undertaking warrants and prompts an amount of care in all the details which is very certain to lead to an early success.

Circumstances, then, must decide the answer to such a question. Capital, or the want of it, business tact, or the want of that also, the distance and dangers of transportation, the char-

acter of the man or men with whom you are proposing to deal, &c., must be the guide. But, all things considered, a man will generally reap the most satisfaction, as well as the most profit, by buying the fowls, and not placing much confidence in eggs which have been handled by such unsympathetic mortals as expressmen and their set, and that after being packed by parties who renounce all responsibility for their condition after being "packed and delivered to the express." ALEXIS.

Buff Cochins.

The Asiatic family, or group of breeds, were first represented in America by the Shanghai, the history of which is of peculiar interest; for their introduction first gave the start to the poultry mania which has brought about such valuable results. But the old red Shanghai, as well as the black and gray varieties which appeared later, have been displaced by their cousins, the much more valuable Brahmas and Cochins.

The various breeds of Cochins are very much alike in general character, and differ mainly in the color of their plumage. The Buff is more commonly met with and more extensively advertised than any other variety of Cochins. Much variety is allowed in the shade, which varies from a very pale hue to a rich, deep color, although at exhibitions all the fowls in one pen must be alike. The light yellow are sometimes called "lemon," and the darker sort "cinnamon" Cochins. The yellow is rich in tone, paler on the fluff than elsewhere, but apart from this, quite equally distributed. The eyes, bill, legs and feet are also yellow.

The buff should be as free from cloudiness as possible. Black sometimes appears in the tail, and often in the neck of the hens, but is considered very objectionable. White ear-lobes are not approved. To get and keep a good, deep hue some care is necessary, as the successive generations will get lighter, if left to themselves.

In shape and carriage the Buff Cochin is superb. The broad breast, compactly folded wings, and large thighs and legs, with the exactness of the head, which seems all the higher from the smallness of the tail, give the breed its well known sturdy dignity. Its fullness of shape, like that of the Brahma, is suggestive enough of meatiness and productiveness to make the breed popular.

The economical merits of Buff Cochins are not particularly distinguished from those of other members of the Cochin family. Their flavor is not so good as that of some other breeds, and their skins are too yellow to sell well in some markets in this country, where the English preference for light skin and legs in poultry prevails, though in some localities yellow-legged fowls are preferred for the table. Their chief merits are their disposition to lay in winter, and their very quiet habits. They are hardy, too, though not more so than the Brahma. The Cochins are particularly free from roup, and their chickens are very easily reared.



The Vegetable Garden.

Ordinarily this month is too hot to allow of much work in the garden beyond the pulling and drying of onions, transplanting cabbages, egg-plants and tomatoes for fall consumption, and keeping thinned and clean the vegetables already in the ground.

Irish potatoes should be dug and put away, care being taken not to expose them for a minute to the hot sun. If they are so exposed they will certainly rot. They should be spread out thinly on a dry cellar floor, or under a house where the sun is excluded.

Toward the end of this month, the earlier kinds of Irish potatoes, which were dug last month, can be replanted, and if planted in good soil will make a good crop before frost. Mulching the ground heavily after a rain will be found a great benefit in raising this second crop.

Snap-beans, corn, tomatoes, may be planted still on the ground from which the early crops have been removed. With a little care and diligence a good and abundant supply of fall vegetables can be obtained.

Cabbages for winter use should now be sown. When the plants are large enough to transplant set them out in trenches three feet apart, seven or eight inches deep, with abundance of well-rotted manure in the bottom of them. As the plants grow draw the soil to them as to celery until the ground is level.

English peas planted this month frequently yield a good crop. Not long ago we read in some horticultural work, the name of which we are unable to recall, that the best way to plant English peas this month is to plant them

under straw—sow the peas in drills twelve or fifteen inches apart and cover the whole with straw a foot thick. The peas will come through the straw without any difficulty, and will yield a large crop.

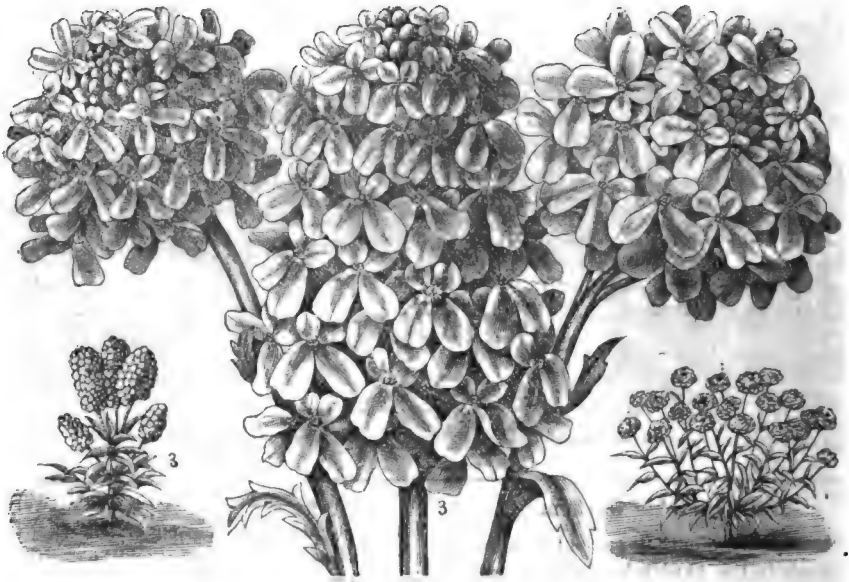
Sprinkle a mixture of salt, ashes and soot over cabbages and cauliflowers while the dew is on them in the morning as a preventive against bugs and worms. Plant cucumbers and melons for pickling. Top the okra, allow none of the pods to open on the stalk except those reserved for seed.

Gather pot, sweet and medicinal herbs when in bloom; dry them in the shade and put away in paper bags for winter use.

If the month be dry and hot, mulch all growing vegetables as far as possible. The increased production will amply repay the labor.

The Flower Garden.

Keep the beds free from weeds and grass. Stir the soil lightly with a fine rake and scrape away all grass from the walks. Top the dahlias to make them bushy, and tie them securely to stakes. If topped after they have ceased to bloom they may flower again on the fresh growth which they will make. Take up bulbous roots, dry them in the shade, and put away to set out again in October. Cut off the decayed flowers of roses and other flowering plants and shrubs. Remove annuals which have gone out of flower and the seed stalks of perennials. Roses may now be budded and layered. Verbenas and petunias, and climbing plants like Wisteria, may also be layered. The Chinese Wisteria grows freely from cuttings, but the cuttings will never bloom. Those



propagated from layers will alone bear flowers. Water the flower garden in the evening after the sun has gone down. Keep the grass of the lawn closely mown.

The Orchard.

The heavily laden branches of all fruit trees should be relieved of a portion of their burden by thinning the fruit and removing all that is defective.

Fruits as they ripen should be gathered immediately. Pears should be picked before they become thoroughly ripe and placed on a shelf in a dark closet, where they will ripen thoroughly and preserve their full flavor. This precaution is particularly necessary in the case of Jargonelles and Bartlett's, which if allowed to ripen on the tree will be found to be rotten at the core. Remove carefully all suckers, pinch the ends of too luxuriant shoots, and in case the tree is growing out of shape, prune moderately.

Keep strawberries free from runners except those which are wanted to make new beds. Cut away the old cane of raspberry bushes, leaving but four or five shoots to each stool.

Now is the time to catch the borers before they lay their eggs in the bark near the ground. It is said that a little guano strewn close to the base of the tree will prevent them from entering the ground to lay their eggs, and others recommend as a preventive to wrap the stem of the tree with brown paper to the height of

a foot from the ground. Worms, borers, bugs and aphides of every kind which prey upon fruit trees should now be pursued and exterminated. A few hours spent in waging this war now will ensure healthy trees and good fruit next year. It is recommended to wash the stems of apple trees in dry weather with ashes and water or brine to protect them against the borer.

For the Southern Farm and Home.

Lawns.

BY THE LATE WM. N. WHITE.

If your lawn is formed of Bermuda grass, the hardiest trees and shrubs should be selected if any are to be planted on the lawn, and the trees ought to have a year or two of growth before the grass is set. If planted on existing lawns, a circle round them not less than six feet in diameter must be kept free from grass. Evergreens in particular will make no growth, and indeed will almost certainly die if planted in turf without being set in a good bed of prepared soil and the grass kept away from them for a few years. Bermuda may be planted like the blue-grass turf, but spreads more rapidly. Of blue-grass seed there should be sown at the rate of not less than one bushel per acre, and of white clover six pounds.

After its formation, the satisfaction to be derived from the lawn depends upon its keeping. The best English and Northern lawns are kept in their lovely green condition by being mown

through the season of growth as often as once every eight or ten days. They are also frequently rolled, and these two operations in time give them the smoothness and elasticity so much valued.

In this country, if the grass be allowed to grow up five or six inches and then is mown, in summer the effect will be, unless mowing happens to precede a long storm, that the grass will die out in patches and weeds will take its place. Bermuda grass is of course in no danger of being destroyed by mowing or anything short of digging up the roots and burning; but with the other grasses, if mowing has been neglected at the proper season, it is better to let the crop remain through the summer to protect and shade the roots from the sun. The roots must be kept hardy by constant exposure to solar influences from frequent mowings made before the grass is high, or else the mowing must be entirely dispensed with and the grass left to shield the roots from the summer sun, and as a mulch in the fall to protect them from the frost. In either of these methods the grass will do well, though in small plats. To mow frequently gives the most satisfactory effect. Mowing when the grass is high and exposing the roots to our burning sun will ruin any lawn except of Bermuda grass.

Lawns should receive an annual coat of manure. Well-rotted stable manure, composted with leaf mold, is the best, but when not obtainable bone dust or manipulated guano is a good substitute. Ashes or lime is a useful application once in three or four years where the soil is not calcareous.

A good portion of the lawn should be left uncovered with trees to admit circulation, give breadth of light, and show the forms of the groups and mosses of the trees.

Do not lay out too many walks, for even the least expensive will be troublesome to keep in order; better trust to the smooth green turf. Scott's walks at Abbotsford were grassy foot-paths. Do not ornament your lawn with too many fountains, vases, etc. There is no necessity for extravagance. All that is wanted is the simple and natural, and this may be secured by employing only trees and grass. Good order is far more beautiful than a confusion of vases, statues, etc.; and rural bedlams, mixed jumbles of discordant forms, materials, ornaments and decorations, are utterly unsatisfactory.

Newly Set Trees.

We offer a few suggestions to those who may have set young trees last autumn or this spring, not as new, but because the necessary care is apt to be overlooked or forgotten. There is a critical period late in spring or early in summer, when trees often suffer severely and sometimes fatally, for want of a little timely attention.

Trees set out last autumn are sometimes seriously injured by winds, which sway about the stem and form a hole in the earth by this motion. The air enters, comes in contact with the roots, and such trees frequently die. The

remedy consists in throwing the earth away from the tree, applying fresh, mellow earth, pressing it down firmly enough to protect the young tree from the wind. Sometimes it may be necessary to throw up a mound of earth as an additional protection for a few weeks until it becomes established. Where the roots have been cut short in taking up, it may be necessary to secure the stem by means of an inclined stake, but staking is always to be avoided if possible. As a general rule, liable to exceptions, trees should never be so large when removed as to require staking; and if the roots have been carefully taken up and well spread out in transplanting, they will stand more securely. Sometimes it happens that a tree having a large top has retained a small set of roots, in which case the head must be freely cut back so as to render it lighter, and to equalize top and roots. But if the buds have already started, or are partly expanded, the cutting back must be omitted, as nothing checks a newly set tree more than pruning too late in spring.

Hardy trees set out in autumn would always do better than spring set trees if properly treated, the earth having become well settled about the roots and an early start given them. But it often happens that all these advantages are lost by neglect. In addition to the injury already mentioned from swaying about by the wind, the hard crust which forms during the several months they have stood is a serious detriment, and care should be taken to break this crust and produce a fine mellow surface.

As hot weather approaches, all newly transplanted trees require mulching. In most cases mellow earth forms the best mulch; and if a circle about the tree, several feet in diameter, is kept clean and well cultivated, the moisture in the soil will be retained, and a fine growth will be the result. An additional mulching will be necessary only on very dry soils, or in an unusually dry season. Young cherry trees form an exception, and they should always be mulched before the hot weather of summer. After having been well set out and commenced growing, the leaves often wither and the trees die under hot suns. Several inches of old straw or grass spread timely under the tree will save it. This mulching should never be omitted with cherry trees the first year.

Watering trees should never be employed except in extreme cases. The practice destroys many more trees than it saves. If they are well set and the earth kept mellow, they will not need it. A neighbor set out thirty cherry trees and watered fifteen. Those not watered all lived; a large number of the watered trees died in consequence of the hard crust which the watering formed on the surface, while none reached the roots a foot below. If water is ever applied to a young tree, the surface earth should be first shoveled away, so that it may at once reach the roots, and the mellow earth then replaced. But even here the intermitting supply thus given is not as good as the uniform moisture preserved by keeping a mellow bed of earth.

The First Garden.

She draws her chair up to his, and lays one hand on his knee, and purses up her little lips into a whistle of expectation—the vixen—and tells about her mother's garden, and how nice it is to have vegetables fresh from the vines every morning, and she will go right out and plan the whole thing herself. And so she does. He takes his spade, and works himself into a perspiration, and she tramps around under a frightful sun-bonnet, and gets under his feet and shrieks at the worms, and loses her shoes, and makes him first vexed, and then mad, and then ferocious. After the garden is spaded, he gets the seed, and finds that she has been thoughtful enough to open the papers and empty thirteen varieties of different vegetables into one dish. This leads him to step out doors where he can commune with nature alone for a moment. Then he takes up the seed and a hoe, and a line and two pegs, and starts for the garden. And then she puts on that awful bonnet, and brings up the rear with a long handled rake, and a pocket full of beans and petunia seed and dahlia bulbs. While he is planting the corn she stands on the cucumber hills, and rakes over the seed pan. Then she puts the rake handle over her shoulder, and the teeth into his hair, and walks over the other beds. He don't find the squash seed until she moves, and then he digs them out of the earth with his thumb. She plants the best seed herself, putting just about two feet of earth and sod upon them. Then she takes advantage of his absorption in other matters, and puts down the petunia seed in one spot, and afterward digs them up, and puts them down in another place. The beans she conceals in the earth wherever she can find a place, and puts the bulbs in the cucumber hills. Then she tips over the seed pan again, and apologizes, and steps on two of the best tomato plants, and says, "O, my!" which in no way resembles what he says. About this time she discovers a better place for the petunia seed, but having forgotten where she last put them, she proceeds to find them, and within an incredible brief space of time, succeeds in unearthing pretty much everything that has been put down. After confusing things so, there is no earthly possibility of ever unravelling them again, she says the sun is killing her, and goes over to the fence, where she stands four hours, telling the woman next door about an aunt of hers who was confined to her bed for eleven years, and had eight doctors from the city, but nothing would give her any relief until an old lady—but you have heard it before. The next day a man comes to his office to get the pay for a patent seed-sower which his wife had ordered, and he no more than gets away before the patentee of a new lawn-mower comes in with an order for ten dollars, and he in turn is followed by the corn-sheller man, and the miserable gardener starts for home to head off the robbers, and finds his wife at the gate with his own hat on, and just about to close a bargain with a smooth-faced individual for a two hundred dollar mowing machine and a pearl-

handled, ivory-mounted hay-cutter. He first knocks the agricultural implement agent on the head, and then drags the miserable woman into the house and, locking the door, gives himself up to his emotions.—*Danbury News.*

Household Department.

Domestic Receipts.

SHORT-CAKE No. 1.—Rub together one quart of flour, one teaspoonful of salt, and one cup of butter, lard or beef drippings. Make into a paste with either sour or buttermilk, and add half a teaspoonful of saleratus dissolved in a little warm water. Make into a soft dough and bake.

ARISTOCRATIC SHORT-CAKE.—Rub together one quart of flour, butter as large as an egg, and one teaspoonful of salt. Then add half a pint or more of thick cream, enough to sufficiently wet the flour, sour cream is the best, with half a teaspoonful of pearlash dissolved in a little water. Sweet cream will do just as well, but if it is used, leave out the pearlash.

STRAWBERRY SHORT CAKE.—Rub together half a cup of butter, one quart of flour, and milk enough to sufficiently wet the flour. If sour milk is used, add a teaspoonful of soda dissolved in a little milk. Bake thin, split in halves and spread with butter and strawberries.

ROSE GERANIUM asks for receipts for nice cakes:

BRIDGEPORT.—One cup of butter, 2 cups of fine white sugar, $3\frac{1}{2}$ cups of flour, 2 cups currants, 1 cup sweet milk, in which dissolve $\frac{1}{2}$ teaspoonful soda, 4 eggs; stir 1 teaspoonful cream tartar into the flour. Bake in two sheets in a quick oven; frost if you choose. By substituting chopped raisins, 1 cup in one-half the above quantity, you have two kinds of cake at one baking; or you can slice citron for the fruit, which is very nice.

FRUIT CAKE.—One and two-thirds cups of butter, 5 cups of flour, 3 cups of sugar, 1 cup of wine, 1 teaspoonful of soda, 1 pound of raisins, 1 pound of currants, $\frac{1}{2}$ pound of citron, 5 eggs. Spice to your taste—nice.

CIDER CAKE.—Two pounds of flour, 1 pound sugar, $\frac{3}{4}$ pound butter, 1 pound currants, 1 pint cider, 6 eggs, 1 teaspoonful soda. Spice to your taste.

LIGHT FRUIT CAKE.—Three-fourths pound butter, 1 pound sugar, 1 pound eggs, 1 pound flour, 1 pound raisins, stoned and chopped a little, $\frac{1}{2}$ pound citron, small teaspoonful soda, no spice. Will keep all summer.

MARBLE CAKE.—White.—One cup of butter, 3 cups white sugar, 5 cups flour, 1 cup new milk, $\frac{1}{2}$ teaspoonful soda, whites of 8 eggs.

MARBLE CAKE.—Dark.—One cup of butter, 2 cups brown sugar, 1 cup molasses, 1 cup sour milk, 4 cups flour, $\frac{1}{2}$ teaspoonful soda, 1 whole egg, yolks of 8 eggs, all kinds of spice. Bake in two deep tins. Put a layer of dark cake in at the bottom, then one of light, and so on. When you cut it, the effect is beautiful.

The Southern Farm and Home.

MEMPHIS, TENN., JULY, 1873.

WM. M. BROWNE, - Editor and Proprietor.
BOYLE & CHAPMAN, - - - Publishers.

TERMS:

Single copy 1 year.....	\$2.00
Three copies 1 year.....	5.00
Five copies 1 year.....	7.50
Single copy six months.....	1.00
Invariably in advance.	

To our Subscribers.

Serious illness and the advice of our physician that total rest from mental labor is necessary to recovery, compel us to omit the issue of our August number, and to ask the indulgence of our subscribers. We hope, God willing, to resume our publication on September 1st, and continue it thenceforward without interruption. Subscribers will of course receive the twelve numbers of the FARM AND HOME for which they have paid, thus losing nothing by the unavoidable interruption of the publication.

THE LAST CENSUS.—If all the statistical information contained in the last Census Reports is as inaccurate and carelessly collected as that in relation to the cotton crop of Georgia, the work which has cost the people so much is utterly worthless, nay worse, because it will mislead every one who consults it. For example, it gives the cotton crop of Pickens county, situated in the extreme northern part of the State, at 14,739 bales. We are satisfied that all the cotton ever raised in the county since it was inhabited by the white man would not amount to half fourteen thousand bales.

The crop of Houston and Early counties, in the middle of the cotton belt, and very large producers, is given at about a third of their real production. We have no doubt that a closer examination will develop a number of similar mistakes, affording another illustration of the practical results of employing incapable men to discharge important duties.

THE PROSPECTS OF THE GROWING CROPS.—Thus far in the agricultural year the prospects of the growing crops are extremely discouraging. We are in receipt of information from all the Southern States, and from various sections

of each State, and with very few exceptions, the accounts represent the crops, with the single exception of rice, as in a very unpromising condition. The excessive rains have rendered cultivation with plow or hoe next to impossible, and consequently the grass and weeds have assumed a supremacy which even favorable weather for the future would only partially destroy. In many places the cotton crop is injured beyond cure. It is so much "in the grass" that it cannot get out of it.

We believe that the acreage planted in cotton this year is considerably larger than that of last year, but we are satisfied that the yield will be considerably less. In May the expectation was well grounded of a fine sugar crop. The cane was in fine condition. Now the grass has overrun it hopelessly.

We hear that the caterpillar has made its appearance in some localities, but as no great damage has been done as yet by this pest, we will not borrow trouble by anticipating evil.

FARMERS' MASS CONVENTION.—A Convention of the farmers of West-Tennessee is called to meet at Humboldt on Wednesday, July 2d, for the discussion of those questions which are now agitating the entire farming population of the country, and for consultation in reference to the special farming and planting interests of West Tennessee.

There are abundant reasons for asking a general attendance. The labor system is unsatisfactory, and in this as in other matters there is great need for co-operative action on the part of the farmers.

Let every Society now organized within West Tennessee send delegates, and every civil district have a representative present. An efficient committee has been appointed, and will attend to the local arrangements. Reductions from the regular hotel rates and railroad fares will be obtained.

General A. J. Vaughan also gives notice that the State Grange of the Patrons of Husbandry will be organized at the same time and place.

A large attendance and a meeting of great interest is anticipated.

REPORT OF THE IOWA STATE AGRICULTURAL SOCIETY.—We are indebted to I. M. Shafer, the able and obliging Secretary of the Agricultural Society of Iowa, for a copy of his Report for 1872. It is full of valuable information, ably compiled, and intelligibly presented.

GEORGIA STATE FAIR.—We have recently received the Premium List of the Fair of the Georgia State Agricultural Society, which is to be held at Macon, Ga., from October 27th to October 31st.

The premiums offered are liberal, and the scope of the list is comprehensive. The Agricultural Society gives its money for the encouragement of agriculture, mechanics, and domestic economy, leaving the horse-races to the special care of the municipal authorities of Macon.

BIBB COUNTY (GA.) AGRICULTURAL FAIR. We would have gladly accepted the invitation sent us by the officers of the Bibb County (Ga.) Agricultural Society to attend their Fair at Macon, on the 18th and 19th of June, did circumstances permit our leaving this city. From intimate association with the Society and knowledge of its members, we take a peculiar interest in its welfare.

We learn with pleasure that the Fair was a brilliant success, both as to the number and quality of the articles exhibited, and in the size of the crowd present. We were glad to see that the small farmers sent forward their products for exhibition; that the big beets, big potatoes and big cabbages were not held back for fear that they would "be nothing beside what the big planters would send." We were glad to see that the fair ladies of Macon took such an active interest in the show, and wish that we could have witnessed the beautiful embellishments which their fair hands wrought. To the success of the first Bibb County Fair, with which we were somewhat identified, we remember how largely the ladies contributed. We rejoice to see that their interest is abiding.

To Capt. Holt and the directors of the Society we offer our sincere congratulations upon their success.

THE CAROLINA LIFE INSURANCE COMPANY. The annual meeting of the stockholders of this company took place on Thursday the 23d June, when the following gentlemen were elected directors to serve for the ensuing year by votes representing a majority of the capital stock of the company: Jefferson Davis, Wade Hampton, Philip Tuggle, Napoleon Hill, Thos. W. White, J. O. Fizer, F. W. Smith, John D. Adams, James S. Wilkins, J. W. Clapp, Thos. H. Allen, N. S. Bruce, C. B. Church, W. F. Boyle and W. A. Goodman.

We are indebted to Hon. Clinton L. Merriam, of New York, for a copy of his speech in the House of Representatives on the bill for the suppression of obscene literature.

CLUB ARRANGEMENTS.—We request our friends in Tennessee, Arkansas and Mississippi to take notice that by special arrangement with the publishers of the following leading journals we can furnish them the *FARM AND HOME* and any of those papers at the subjoined reduced rates:

<i>FARM AND HOME</i> and <i>Weekly Memphis Appeal</i> , per annum.....	\$3 50
<i>FARM AND HOME</i> and <i>Weekly Memphis Register</i> , per annum.....	\$3 00
<i>FARM AND HOME</i> and <i>Weekly Arkansas Gazette</i> , per annum.....	\$3 00
<i>FARM AND HOME</i> and <i>Columbus (Miss.) Democrat</i>	\$3 00
In addition to these we can furnish the <i>FARM AND HOME</i> and any one of the following valuable periodicals at the following prices:	
<i>FARM AND HOME</i> and <i>Southern Christian Advocate</i> (Macon, Ga.), per annum.....	\$3 00
<i>FARM AND HOME</i> and <i>Southern Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME</i> and <i>Harper's Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME</i> and <i>Lippincott's Magazine</i> , per annum.....	\$5 00
<i>FARM AND HOME</i> and <i>Appleton's Journal</i> , per annum.....	\$5 00
<i>FARM AND HOME</i> and <i>Hearth and Home</i> , per annum.....	\$3 50

ALL LETTERS relating to the editorial or business departments of the *FARM AND HOME* should be plainly addressed to **WILLIAM M. BROWNE**, Memphis, Tenn.

REMITTANCES to the *SOUTHERN FARM AND HOME*, for subscriptions and advertisements, must be made in bank drafts, checks, postoffice orders, or by express.

CLUBS.—Those who may feel inclined to extend the circulation of the *FARM AND HOME*, and at the same time benefit themselves, are requested to read the liberal terms offered to clubs. (See advertisement.)

We call the attention of our readers to the advertisements of Cane Machinery and Improved Thresher, manufactured by Blymyer Manufacturing Company, of Cincinnati, O.

THE CHOLERA.—We sincerely rejoice to learn from the best sources of information, that the terrible disease which has been raging in this city for the past five or six weeks has materially abated, and may be said to have almost disappeared. Whether it is properly called Asiatic cholera or not is, in our opinion, a matter of very small consequence. It was a fearful disease, whatever its proper name, has carried off a number of our citizens, and has brought desolation into many hitherto happy homes.

We have abundant reason to thank Almighty God that the disease did not become a pestilence. The condition of the streets and alleys of the city was disgraceful to any people having any claim to decency. The highways absolutely reeked with every species of filth and stench, and not an organized effort was made in any direction that we could hear of to abate these nuisances. They exist now—witness the fœtid, stagnant pool on the corner of Main and Linden streets.

The citizens generally showed marked fortitude and presence of mind. They neither felt or exhibited any fright. Nobody ran away, and we attribute to this as much as to anything else the comparatively few deaths which took place. Considering the amount of taxes levied on and wrung from the citizens of Memphis by the municipal government, there is less value received than in any other place on earth, not even excepting New York. Even the luxury of clean streets is not given. "Pay your two and a half or three per cent., or we, the municipal government, will levy on and sell the bed you sleep on; but do not be so ridiculously unreasonable as to expect anything in return." Ours is, it is true, the worst lighted, worst paved, and by all odds the filthiest city in America; but we have the biggest taxes.

BEAUTIFUL CHROMOS.—The publishers of those excellent periodicals, the *American Agriculturist* and the *Hearth and Home*, have just sent us copies of two exquisitely-executed chromos which they present to their subscribers for 1873, namely, "The Strawberry Girl," 14 by 20 inches, and "Mischievous Brewing," 11 by 13 inches.

They are very pleasing pictures, worth intrinsically much more than the subscription price of the *Agriculturist* and the *Hearth and Home*, which are two of the best papers of their class in America. We advise all who have \$4 75 to send for both papers for one year, and secure the chromos in addition.

VOL. IV, No. 2.—3.

TO OUR EXCHANGES.—The new postal law requiring the payment of postage on exchanges compels us, much against our will, to curtail our list considerably, confining it to those papers that we usually consult in the preparation of our own. We would be glad to receive the accustomed visits of all of our friends whose columns we have so long read with interest and profit, but our expenses are too large and economy is too necessary to permit us to incur the heavy outlay which the payment of postage on our present exchanges would involve. We have sent postal cards to the publishers of those papers which we desire to receive, requesting them to continue the exchange.

THE CHOLERA ELSEWHERE.—We are sincerely rejoiced to learn that the cholera, which has been so fatal in Nashville and other places in Tennessee, has abated considerably within the past few days. While there is still a great deal of sickness in those places, it is of a character which is manageable and yields to treatment if taken in time.

CONDOLENCE.—Our esteemed friend and fellow-citizen, JAMES S. WILKINS, has our heartfelt sympathy in his terrible bereavement, by the loss, after a short illness, of his excellent wife. All who knew Mrs. Wilkins admired and respected her, and heartily condole with her husband in his affliction.

OFFICERS OF THE CAROLINA LIFE INSURANCE COMPANY.—The newly elected Board of Directors of this popular Southern institution, met at the Company's office on the 26th ult., for the purpose of electing officers for the ensuing year. By unanimous vote the following officers were chosen:

President—Hon. Jefferson Davis.

Vice Presidents—General Wade Hampton, Philip Tuggle.

Secretary—Gen. William M. Browne.

Medical Examiner—E. Woodward, M. D.

Consulting Physician—B. W. Avent, M. D.

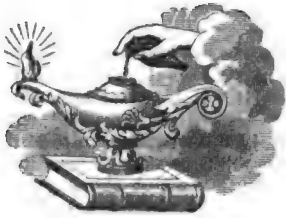
Attorney—Hon. H. T. Ellett.

Actuary—Gen. E. P. Alexander.

A correspondent of the *Germantown Telegraph* has a guano factory, the processes employed in which he describes as follows:

"For several years past I have had what bones were obtained on the farm made into guano in the following manner: From time to time, as there are any bones to dispose of, I take them to my henhouse, lay them on a flat stone, and with an old ax break them up fine, and then let the hens eat them. This is all the labor that is required, and the bones and other articles of food which the hens eat are digested and made into as good guano or manure as I ever used for any purpose. It is not necessary to wait a year for guano made in this way, for it is ready at any time that it is wanted."

Literary Department.



EDITOR'S BOOK TABLE.

THE TREATY OF WASHINGTON—ITS NEGOTIATION, EXECUTION, AND THE DISCUSSIONS RELATING THEREON. By Caleb Cushing. 12mo., pp. 280. (Harper & Brothers.)

Perhaps among all the public men in the United States, there is not one who is so utterly destitute of convictions of his own on any subject as is Caleb Cushing, and who at the same time can advocate and present more ably the convictions of others, where the interest or *honorarium* is sufficiently large to arouse his energies. Mr. Cushing is a very old man. He has been in public life for a long time. He has held high positions. He possesses a vast amount of information, and has decided talent of a certain order. But he is essentially a mediocrity. He has no opinions of his own, and not even his bitterest enemy has ever accused him of approaching the consideration of any question, embarrassed by the faintest shadow of principle.

The outrageous vulgarity, unblushing impudence, swaggering mendacity and disgraceful ignorance displayed in the "American case," as presented by Mr. Cushing and his associates before the arbitrators at Geneva, compelled Sir Alexander Cockburn, the Chief Justice of England, the representative of Great Britain in the Court of Arbitration, to expose the falsehoods, misrepresentations and ignorance of the Cushing brief, and he performed this duty with the ability, incisive argument, conclusive logic and profound legal erudition for which he is distinguished among the most learned jurists of the world. His exposure of Mr. Cushing and his "case" very naturally galled that gentleman, and was also calculated to gall Mr. Cushing's employers, for it presented him and them to the world in a very discreditable light, as falsifiers of fact, stupid ignoramuses and pot-house swaggers, while doubtless Cushing and his associates supposed they were astonishing benighted Europe by the force of their argument, the depth and variety of their knowledge and the dignity of their pride. To be thus pilloried for all time in an historical document was, of course, very disagreeable. Something must be done to "head off the Chief Justice," therefore Caleb Cushing was hired to complete his management of the "American case," by writing in the guise of an history of the Treaty of Washington, a vulgar attack on Sir Alexander Cockburn, which no American gentleman can read without a sense of shame, and

which nobody can read without a feeling of contempt for the author. It would be discreditable for one slangwhanging Newburyport editor to have written about another. It not only violates truth in almost every line, but it violates the common decencies of polite life. It is the meanest, the falsest, the most vulgar, the most entirely indecent book we have ever read from the pen of a man who laid any claim to the respect and consideration of respectable people.

THE MINERAL SPRINGS OF THE UNITED STATES AND CANADA. By Geo. E. Walton, M. D. 12mo., pp. 390. (D. Appleton & Co.) The appearance of this book at this season, when the world and his family are debating the question as to what watering place to go to, is exceedingly timely. Hitherto the public has had a very vague idea as to the medicinal properties of the "waters" they drank during the summer, and went it blind on the general principle that "the waters were first-rate for the system." Dr. Walton, in the work before us, enumerates the various springs in the United States and Canada, establishes by careful analysis their several properties, and tells us what particular diseases they are calculated to cure. We regard the work as very valuable. It is well printed, embellished with several maps, and may be regarded as an excellent guide-book of the springs generally.

BRESSANT. A Novel. By Julian Hawthorne. (D. Appleton & Co.) We have read many worse, and a great many better novels than this. The hero is by no means an estimable character, although we find him "studying for the ministry." He falls in love with the two young ladies he finds in the house of his venerable preceptor, and the fact is, though he is a conceited, priggish, and rather self-willed young man, these young ladies teach him a lesson or two which astonish him considerably. The real and the natural in "Bressant" are always made to give way to the sensational, yet there are parts of the book which show positive power and talent of a high order.

THE NEW MAGDALEN. A Novel, by Wilkie Collins. (Harper & Brothers.) Like everything that has yet appeared from the pen of this most gifted writer, "The New Magdalen" is as unnatural as it is powerfully written and full of dramatic incident and effect. Although there never was and never could have been anybody like either the real or fictitious Grace, or like Lady Janet, and although, for the credit of human nature, we hope there are few such miserable, weak snobs as Horace Holmcraft, the book is charming. Once begun, it must be finished before sleeping. There are some really grand scenes in the closing chapters.

MURPHY'S MASTER. A Novel. By James Payn. (Harper & Brothers.) We do not remember ever having read a novel so thoroughly sensational as this. It contains only sixty-four pages, but it may be truly said of them that they are "filled with startling incidents." The hero and Murphy are introduced to the reader

at the very outset escaping from the officers of justice, the former having committed the indiscretion of murdering his brother. They are driving at breakneck speed in the night, and while *en route* a storm providentially prostrates some trees across the highway, by which the pursuing constables break their necks and disappear forever. After a few days spent in London making arrangements for their voyage to the antipodes, during which Murphy displays various playful traits of character, and, like his master, shows a decided partiality for murder, master and man, with a number of retainers and a young stranger picked up on the road when the trees fell, who becomes immediately the friend and confidant of Murphy's Master and resolves to accompany him to the ends of the earth, the whole party set sail, but before the vessel gets to sea the police board her in search of the master. He escapes, however, because he has taken the precaution to put on a gray wig and feign serious sickness. In due course of time the ship reaches a "volcanic isle" (whatever that may be) which is supposed to have sprung out of the ocean without any notice and for no apparent purpose except to serve the convenience of Murphy's Master, who immediately resolves to disembark there with Murphy and the Tipperary retainers and the confidential friend, and there establish a kingdom as "monarch of all he surveys." "Murphy's Master" is very much addicted to whisky. He is frequently afflicted with *mania a potu*, and during the paroxysms of this terrible disease commits irregularities which are incompatible with the justice that should characterize a benevolent sovereign. The confidential friend tries to escape in an open boat with his *stancée* and others, is pursued and captured by Murphy; but as the boats with the prisoners are approaching the "volcanic isle" it disappears in a twinkling, and Murphy's Master, his kingdom, reign and subjects become suddenly "in the deep bosom of the ocean buried." This unexpected calamity produces a strong effect upon Murphy, as one might naturally suppose, and he straightway does the only thing he could do under the circumstances which would be at all consistent with his previous career—he jumps overboard and joins his master. When we got this far in the story we stopped, entirely satisfied and not caring a straw what became of the prosaic beings who failed to follow Murphy's example.

GEO. P. ROWELL & Co.'s AMERICAN NEWS-PAPER DIRECTORY for 1873, 8 vo., pp. 608, (Geo. P. Rowell & Co., Publishers,) is the best and most complete book of its kind we have ever seen. It contains a list of all the newspapers and periodicals published in the United States and Canada, giving the names of the editors and publishers and their respective circulation, thus furnishing the best and most reliable guide for advertisers that is attainable. Rowell & Co. are the well known and deservedly popular advertising agents, men of large enterprise, high integrity, and prompt business habits. We thank them for the copy of their handsome directory.

LITTELL'S LIVING AGE.—The numbers of *The Living Age* for the weeks ending June 7th and 14th have following valuable and interesting contents:—Maury on Sleep and Dreams, *Edinburgh Review*; Niagara, by Prof. Tyndall, *Macmillan's Magazine*; Notes on Ghosts and Goblins, *Cornhill Magazine*; The Physical Effects of Forest upon Atmosphere and Soil, *Academy*; Two Acts of Self-Devotion, *Blackwood's Magazine*; Lecture on Mr. Darwin's Philosophy of Language, by Prof. Max Muller, *Fraser's Magazine*; Malingering, *Chambers' Journal*; Godchildren, *Pall Mall Gazette*; The Literary Sin of Singularity, *Spectator*; with installments of "The Parisians," by Bulwer (Lord Lytton); "Innocent," by Mrs. Oliphant; "The Prescotts of Pamphillon," by the author of "Dorothy Fox," and "The Two Brothers," by the distinguished French novelists, MM. Erckmann-Chatrian; and poetry and miscellany. The subscription price of this 64 page weekly magazine is \$8 a year, or for \$10 any one of the American \$4 magazines is sent with *The Living Age* for a year. Littell & Gay, Boston, Publishers.

HARPER'S MAGAZINE for July is crowded with important, timely, and entertaining articles from the ablest American and European writers. Charles Reade's serial story, "A Simpleton," is continued. Emilio Castelar resumes his series of papers on the Republican Movement in Europe, with a review of the Germanic Races, which is to be continued through several numbers. Thos. W. Knox contributes a brilliant and instructive paper on Russian Policy in Asia, and Junius Henri Brown, in a splendidly illustrated article, treats of Sicilian topics in his most charming style. A series of illustrated articles is commenced, describing Gen. Sherman's recent tour in Europe and the East, contributed by the general's aid-de-camp, Col. J. C. Audenried.

The number opens with a characteristically illustrated paper describing our sailors' lives on shore. This is followed with a timely article (illustrated) on National Standards and Emblems. There is also a poem by Mrs. M. D. Brine, "Down by the Brook," with a very beautiful illustration from a drawing by Chas. Parsons. Bayard Taylor contributes a poem.

LIPPINCOTT'S MAGAZINE for this month commences the twelfth volume of this excellent periodical. In this issue are given the opening chapters of a new and very pleasing narrative of travel, "The New Hyperion," beautifully illustrated with drawings from the unrivalled pencil of Gustave Dore.

THE SOUTHERN MAGAZINE for July is a capital number. The following table of contents justifies our opinion:

"On the Giersfeld," Prof. F. Schaller; "On the Steps of the Bema," Prof. B. L. Gildersleeve; "The Railroad Question at the West," Edward Spencer; "Enchanted," Barton Grey; "Just in Time," W. H. Kemper; "A Visit to Paraguay," Don; "In the Infinite," from the French of C. Flammarion; "The Period of Transition from the Roman Empire to the Frankish," Prof. C. Woodward Hutson; "Non

Diu;" "The Story of Katherine Hollis," Henrietta Hardy; "San Antonio de Bexar," Sidney Lanier; "Smoked Out," R. W.; "The Philosophy of Ugliness," Prof. G. F. Holmes; "Reviews;" "The Green Table."

ECLECTIC MAGAZINE.—The *Eclectic* for July, beginning a new volume, is on our table, and is one of the best numbers of any magazine that has been issued during the year. It has contributions from writers such as Professor Tyndall, who writes of "Niagara Falls;" Professor Huxley, who discusses the "Problems of the Deep Sea;" Prof. Max Muller, whose "Lectures on Mr. Darwin's Philosophy of Language" are the most important of recent attacks on "Darwinism;" and Mr. Tom Hughes, who treats in a most suggestive manner of the various "Problems of Civilization."

Other valuable papers are: "Charles, Comte de Montalembert;" "Louis Napoleon, painted by a Contemporary;" "Homespun Songs," by Sam Slick, Jr.; "Malingerings;" "Northumberland House and the Percys;" "Some One Pays;" "Too Soon;" and "Capt. M. F. Maury."

Insurance Department.

State Impositions.

One of the most grievous burthens which life insurance companies have to bear, is the arbitrary taxation which State legislatures impose upon them. Insurance bureaus with commissioners, schedules of fees, deposits in State funds, &c., &c., are created by State legislatures—that is, bills to that effect are drawn by some needy place-hunter who finds it inconvenient to make a living by honest labor, and they are passed by ignorant legislators, who are made to believe that they are necessary to the "protection of the policy-holder," and that insurance companies, like every other business, should be made to bear their part of the taxation.

Every one who knows anything about insurance knows that all the fees and taxes which are wrung from companies by these "insurance bills" are really paid by the policy-holders, that they diminish the profits which are divided among them, and that so far from being a protection in the legitimate meaning of the word, they are a positive injury.

We believe that the insurance business, like banking and every other business which involves confidence and trust, should be guarded by wise and effective laws to secure the public against fraud and mismanagement. But the creation of offices with large fees, the imposition of heavy taxes, the compulsory requirement to invest in State bonds as a pretended security for policy-holders—but as a real dodge to dispose of depreciated bonds in which no sane man would invest a dollar, and the appointment as commissioner of some needy out-at-the-elbows party hack, who does not know enough of insurance to spell the world correctly—these things are no safeguards for any

body. They are impositions to which well-managed companies having a proper regard for the interest of their policy-holders will not submit, because they involve an expense which the business cannot legitimately bear.

We are we believe as strenuously opposed as any body to all centralization in legislation and government, but we are fast approaching the belief that the passage of a general insurance law by Congress creating one insurance bureau, one commissioner, one schedule of fees, &c., &c., will be a relief devoutly to be wished. One nuisance may be onerous and irritating, but it is preferable to thirty-seven nuisances, with the territorialities to hear from.

Instead of State legislatures passing laws to keep capital at home and encourage it to seek investment within their borders, they seem to puzzle their brains to devise means to drive it away and exclude it by every species of tax, hindrance and embarrassment they can impose.

The Perils of Policy-holders.

The men who first made human life property, and the association of men who first indemnified for the loss of that property, were original and co-operative workers for the welfare of the world. Thitherto life was solely valuable in its living, and death was individual bankruptcy, and the bankrupt's assets were but the common shroud and simple coffin. Human life was sacred only for the sake of its existence, and not as an inheritance. Life insurance, then, is a supremely unselfish and disinterested investment. He who insures for his family, thereby not only makes his mind and heart and general powers, but his very body, a positive and indefeasible blessing to his legal beneficiaries. The highest order of a man is he who is unselfish to the uttermost to those to whom his existence is essential.

He who lives for others may live lowly, but he is living gloriously. Life framed narrowly in selfishness is but a bitter and charmless landscape at best, but when self is in the subdued background, and family and friends are the favored foreground, then the scene is beautiful, and its contemplation delightful. The true father and husband is he who insures and maintains at all hazards the policy. Let any one who underestimates the sublime duty of life insurance or fails to discern its benevolent beauty, call his little girl to his side, and contrast her present joy and comfort with what might be if he should die. Let him see the little shorn lamb, out of the fold, in the bleak and open world, where the only warmth and welcome is offered by the shepherdess, Sin!

Under the present humane and liberal system of life insurance, intense and sorrowful destitution can be made impossible. Abject and gaunt poverty makes any degree of degradation probable. A family of little ones, with a defenseless and helpless mother, launched precipitately upon life by the sudden death of a father, are like unto the little band who floated through the darkness of the long Arctic night and the perils of an untried Arctic sea upon a frail raft of fast-dissolving ice. If they are

not rescued by some of the noble charities of the nineteenth century, God help them.

This may be an old and wearisome story, often told and negligently listened to, but the incidents and dismal illustrations of every day give to its utterance an impressive moral and a mighty import. The verities of life insurance seek not nor do they need vindication; but there is a crisis that comes upon many policy-holders which may be profitably commented upon. We mean the tempting time when, in a fitful and despondent moment, policies of long standing are surrendered, forfeited or discounted. Already this distress of policy-holders is being converted into merchandise. A department, or office where the policies of discouraged holders are discounted, has been started in San Francisco. A speculation of that sordid character should be defeated. A life insurance policy is, or should be, as inviolable as a will or a trust deed. Who would care to deal in or discount wills, or who would wish to do a remunerative brokerage in deeds of trust, when that trust touched the comfort of widows and orphans? As well buy and sell the little sacred mementoes of the dead, or traffic in the sorrows of the stricken and bereft.

All inducement to surrender and sacrifice policies should be opposed, and all opportunities for so doing withdrawn. In these days of commercial depression, the temptations to surrender are often present, dangerously powerful, and sometimes overwhelming. To obtain ready money at times when ready money is a ransom for honor, then the policy is a hostage for the money, and men of average pride will make the sacrifice; but they should cherish and preserve their policies.

Let the assured remember that, if kept alive, his policy of life insurance will, like a lighted fire, keep the wolf from the door of the desolate; that it will shelter his else helpless posterity from misuse and contempt. Let him, when tempted to sacrifice it, always gratefully remember that it bestows upon him a sort of earthly immortality, a paternal and conjugal remembrance ever reviving in the hearts of those he loved. He may be dead; but he is not therefore done providing for his beloved. Still from his motionless hand proceeds the same bounty, as if his heart was warm and his energies alive as ever. From the industry and watchfulness of his loving life, the supply is continued after death.

How important, then, that no situation however severe, be allowed to carry away this safeguard. How essential to the perfection and triumph of life insurance that all inducements and resources for the surrender and forfeitures of policies or their invalidation be discountenanced. Insure and stick to it is the only safe rule. When that fabulous woman, the Spartan mother, gave her son the battle shield, she said "Return with this, or upon it." In the struggle of life, the policy-holder will be often tempted to throw away his shield. Looking at his wife and children, his motto should be, "Living with this intact, or dying with them by it defended."—*Chronicle*.

Poetry.

To My Husband.

I shine in the light of God,
His image stamps my brow;
Through the valley of death my feet have trod,
I reign in glory now.
No breaking heart is here,
No keen and thrilling pain,
No wasted cheek, where the frequent tear
Hath rolled and left its stain.

I have found the joys of Heaven,
I am of the angel band,
To my head a crown of gold is given,
And a harp is in my hand.
I have learned the song they sing,
Whom Jesus hath set free,
And the glorious walls of Heaven still ring
With my new-born melody.

No sigh, no grief, no pain;
Safe in my happy home;
My fears all gone, my doubts all slain,
My hour of triumph come.
Oh, friends of my mortal years—
The truest and the true—
Ye are walking still in the valley of tears,
But I wait to welcome you.

Do I forget? Oh, no!
For memory's golden chain
Shall bind my heart to the hearts below,
Till they meet and touch again.
Each link is strong and bright,
And love's electric flame
Flows freely down, like a river of light,
To the world from which I came.

Do you mourn that another star
Shines out from the glittering sky?
Do you weep when the raging voice of war
And the storm of conflict die?
Then why should your tears run down,
And your hearts be sorely riven?
For another star's in the Savior's crown,
And another soul's in Heaven.

The Story of June.

BY CALLED DUNN.

I.

Under the willow arches where the glad, free brooks
are singing,
And the busy wren, bell-throated, sweetens the air with
its ringing,
Where the voiceful foliage whispers, and the low soft
hum of the bees
Sounds like a harp enchanted in the heart of the beautiful
trees;
Where the breath of the dew ascending tempers the heat
of the noon,
Close to the graves of my darlings I list to the story of
June.
June, with her sweet voice tender and her smiles that
are never cold,
June, with her glorious sunshine that flushes the river
with gold,
June, with a wreath of lilacs crowning her beaming
head,

June, with her honeysuckles and her strawberries ripe and red.

I will list to her eloquent story as a lover would fondly list

To the music of love's confession from the lips he has often kissed;

I will make a harp of my being for her fingers to play upon

And strike the familiar anthem of the better days that are gone.

II.

Come to me, come, my darlings, come to me, my departed!

Come when my path is clouded and my life seems broken hearted;

Come to me with the accents that drop from the lips of June

And smile from your home in Heaven through the tremulous mist of the moon;

Come when the dawn is breaking; come with the rising sun;

Come when the day is ending and the sunny hours are done;

Come when the shadows gather between the earth and the sky,

And the star-eyed Spirit of Evening in her dusky robe trails by;

Come to me when the evil that rankles my soul within Raises its passionate fury and quickens my soul to sin.

Come to me, then, my loved ones, and sever the evil chain

That fetters my soul to the tempter and burdens my soul with pain;

Come down the starry pathway that leads to that beautiful clime,

While life is a glory immortal, and love is a truth sublime.

III.

Come to me, come, my darlings, come to me in my dreaming!

Come when my soul seems nearing the heavenly shore, bright-gleaming,

And the voices of choirs angelic their music upon me pour—

The music once heard, my darlings, we would hear for evermore.

Come while the rose is brightest and the violet drops its head,

Like a lonely mother weeping above the grave of her dead;

Come while the flowers we planted lovingly on your tomb

Are living again in beauty, and sweet with the sweetest perfume.

I would feel your presence beside me, for all that through it I see

Is bright with a beauty the brightest of all earth's beauties to me.

Come while the birds are singing, and the smiles of the joyous rills

Gleam like a vein of sunshine between the slumbrous hills;

Come ere the shadows 'waken the night owl from its dream—

Ere the trees in the twilight dimness like ghostly giants seem.

Come to me now, come quickly, while the bluebird weaves his tune,

And together we'll listen, my loved ones, to the beautiful story of June.—*New York Ledger*.

JOHN GRANGER.

A GHOST STORY.

By the Author of "*Lady Audley's Secret*," &c.

[CONCLUDED.]

Susan did not say much more about that awful figure in the arm-chair. It was no use trying to convince her husband that the thing which she had seen was anything more than a creation of her own brain. She was very quiet all the rest of the evening, though she tried her uttermost to appear as if nothing had happened.

Robert Ashley saw Mr. Simmons, the cashier, next day, and came back to his wife elated by the result of his inquiries. John Granger had written for another five hundred pounds by the very last post from America, and reported himself well and thriving. He was still in New York, and Mr. Simmons had given Robert Ashley his address in that city.

Susan wrote to her old friend that very afternoon, telling him what she had seen, and begging him to write and set her mind at ease. After all, it was very consoling to hear what she had heard from her husband, and she tried to convince herself that the thing she had seen was only a trick of her imagination.

Another month went by, and again in the twilight the same figure appeared to her. It was standing this time with one arm leaning on the high mantelpiece; standing facing her as she came back to the room, after having quitted it for a few moments for some slight household duty.

There was a better fire and more light in the room than there had been before. The logs were burning with a steady blaze that lit up the well known figure and unforgotten face. John Granger was looking at her with an expression that seemed half reproachful, half beseeching. He was very pale, much paler than she had ever seen him in life; and as he looked, she standing just within the threshold of the door, she saw him lift his hand slowly and point to his forehead. The firelight showed her a dark stain of blood upon the left temple, like the mark of a contused wound.

She covered her face with her hands, shuddering and uttering a little cry of terror, and then dropped half fainting upon a chair. When she uncovered her face the room was empty, the firelight shining cheerily upon the walls, no trace of that ghostly visitant. Again when her husband came in, she told him of what she had seen, and of that mark upon the temple, which she had seen for the first time that night. He heard her very gravely. This repetition of the business made it serious. If it were, as Robert Ashley fully believed it was, a delusion of his wife's, it was a dangerous delusion, and he knew not how to charm it away from her mind. She had conjured up a new fancy now—this notion of a blood-stained temple; a ghastly evidence of some foul play that had been done to John Granger.

And the man was alive and well in America all the time; but how convince a woman of that fact when she preferred to trust her own sick fancies?

No answer had come to her letter, though there had been more than time for her to receive one.

"Robert," she said to her husband one day, "I do not believe that John Granger ever went to America."

"O, Susy, Susy, I wish you could get John Granger out of your head. Who is it that writes for his money, if it is n't him?"

"Anybody might know of the money—people know everything about their neighbors' affairs in Hillborough—and anybody that knew John Granger's hand might be able to forge a letter. I do n't believe he ever went to America, Robert. I believe some accident, some fatal accident, happened to him on the night he was to leave Hillborough."

"Why, Susy, what should happen to him, and we not hear of it?"

"He might have been waylaid and murdered. He had a good deal of money about him, I know, that night; he was to sail from London by the *Washington*, and his luggage was all sent to an inn near the docks. I wish you'd write to the people, Robert, and ask if he arrived there at the time he was expected; and I wish you'd find out at the station whether he was seen to go away by the train that night."

"It's easy enough to do as much as that to please you, Susy. But I wish you would n't dwell upon these fancies about Granger; it's all nonsense, as you'll find out sooner or later."

He wrote the letter which his wife wanted written, asking the landlord of the Victoria Hotel, London Docks, whether a certain Mr. John Granger, whose traveling chests had been forwarded from Hillborough, had arrived at his house on the 24th of July last, and when and how he had quitted it. He also took the trouble to go to the Hillborough station, in order to question the station-master and his subordinates about John Granger's departure.

Neither the station-master nor the porters were able to give Robert Ashley any satisfactory information on this point. One or two of the men were not quite clear that they knew John Granger by sight; another knew him very well indeed, but could not swear to having seen him that night. The station-master was quite clear that he had not seen him.

"I'm generally pretty busy with the mail-bags at that time," he said, "and a passenger might very well escape my notice. But it only would have been civil in Granger to bid me good-bye; I've known him ever since he was a lad."

This was not a satisfactory account to carry back to Susan, nor was the letter that came from London in a day or two much more satisfactory. The landlord of the Victoria Hotel begged to inform Mr. Ashley, that the owner of the trunks from Hillborough had not arrived at his house until the middle of August. He was not quite sure about the date; but he knew the luggage had been lying in his place for something over three weeks, and he was thinking of advertising it, when the owner appeared.

Three weeks! and John Granger had left Susan Lorton that July night intending to go

straight to London. Where could he have been? What could he have been doing in the interval?

Robert Ashley tried to make light of the matter. Granger might have changed his mind at the last moment—at the railway station, perhaps—and might have gone off to visit friends in some other part of the country. But Susan told her husband that John Granger had no friends except at Hillborough, and that he was not given to changing his mind upon any occasion. She had now a settled conviction that some untimely fate had befallen her old friend, and that the letters from America were forgeries.

Ashley told his friend Simmons the story of the ghost rather reluctantly, but it was necessary to tell it in explaining how the letter to the London hotel-keeper came to be written. Of course Mr. Simmons was quite ready to agree with him that the ghostly part of the business was no more than a delusion of Susan's: but he was a good deal puzzled, not to say disturbed, by the hotel-keeper's letter. He had talked over John Granger's plans with him on that last day, and he remembered that John had been perfectly decided in his intention of going straight to London. The three weeks' interval between his departure from Hillborough and his arrival in that city was a mystery not easily to be explained.

Mr. Simmons referred to the letters from New York, and compared the signatures of them with previous signatures of John Granger's. If they were forgeries, they were very clever forgeries; but it was a plain commercial hand, by no means difficult to imitate. There was one thing noticeable in the signatures to the American letters—they were all exactly alike, line for line and curve for curve. This rather discomposed Mr. Simmons, for it is a notorious fact, that a man rarely signs his name twice in exactly the same manner. There is almost always some infinitesimal difference.

"I'm going up to London in a month," said the cashier; "I'll call at the Victoria Hotel when I'm there, and make a few inquiries about John Granger. We can make some excuse for keeping back the money in the meantime, if there should be any written for."

Before the month was out, John Granger's ghost appeared for the third time to Susan Ashley. She had been to Hillborough alone to make some little purchases in the way of linen drapery, and came home through Hawley Wood, in the tender May twilight. She was thinking of her old friend as she walked along the shadowy winding footpath. It was just such a still, peaceful evening as that upon which he had stood on the edge of the wood, looking back at her, and waving his hand, upon that last well-remembered night.

He was so much in her thoughts, and the conviction that he had come from among the dead to visit her, was so rooted in her mind, that she was scarcely surprised when she looked up presently and saw a tall, familiar figure moving slowly among the trees a little way before her. There seemed to be an awful still-

ness in the wood all at once, but there was nothing awful in that well-known figure.

She tried to overtake it, but it kept always in advance of her, and at a sudden turn in the path, she lost it altogether. The trees grew thicker, and there was a solemn darkness at the spot where the path took this sharp turn, and on one side of the narrow footpath there was a steep declivity and a great hollow, made by a disused gravel-pit.

She went home quietly enough, with a subdued sadness upon her, and told her husband what had happened to her. Nor did she rest until there had been a search made in Hawley Wood for the body of John Granger.

They searched, and found him lying at the bottom of the gravel-pit, half-buried in loose sand and gravel, and quite hidden by a mass of furze and bramble that grew over the spot. There was an inquest, of course. The tailor who had made the clothes found upon the body identified them, and swore to them as those he had made for John Granger. The pockets were all empty. There could be little doubt that John Granger had been waylaid and murdered for the sake of the money he carried upon him that night. His skull had been shattered by a blow from a jagged stick, on the left temple. The stick was found lying at the bottom of the pit a little way from the body, with human hair and stains of blood upon it.

John Granger had never left Hillborough; and the person who had contrived to procure so much of his money, by forged letters from America, was, in all probability his murderer. There was a large reward offered for the discovery of the guilty party; the police were hard at work; and the inquest was adjourned several times, in the hope that new facts might be elicited.

Susan Ashley and her father were examined closely as to the events of that fatal evening of July the 24th. Susan told everything; her cousin, Stephen Price, dropping in while they were at tea, the questions and answers about the money John Granger carried upon him—all to the most minute particular.

"Then Stephen Price knew of the money John Granger had about him?" suggested the Coroner.

"He did, sir."

"Did he leave your father's house after Granger, or before him?"

"Before him, sir. I should think nearly an hour before him."

The inquest was again adjourned; and within a week of this examination Matthew Lorton received an application from the police, asking for a photograph of his nephew, Stephen Price, if he happened to possess such a thing.

He did possess one, and sent it to London by return of post.

The landlord of the Victoria Hotel identified the original of this portrait as the person who had represented himself to be John Granger, and had carried away John Granger's luggage.

After this the work was easy. Little links in the chain were picked up one by one. A laboring man turned up who had seen Stephen

Price sitting on a stile hard by Hawley Wood, backing at a thick, jagged-looking stake with his clasp-knife, on the night of the 24th of July. The woman at whose house Price lodged gave evidence that he broke an appointment to play billiards with a friend of his on that night; the friend had called at his lodgings for him twice, and had been angry about the breaking of the appointment; and that Stephen Price came in about 10½ o'clock, looking very white and strange, and saying that he had eaten something for his dinner which had made him ill. The lad who was his fellow clerk was ready to swear to his having been disturbed and strange in his manner during the two or three weeks before he left Hillborough; but the boy had thought very little of this, he said, knowing how deeply Stephen was in debt.

The final examination resulted in a verdict of willful murder; and a police officer started for New York by the next steamer, carrying a warrant for the apprehension of Stephen Price.

He was not found very easily, but was ultimately apprehended, with some of John Granger's property still in his possession. He was brought home, tried, found guilty, and hung, much to the satisfaction of Hillborough. Shortly afterward, Mr. Vollair produced a will, which John Granger had executed a few days before his intended departure, bequeathing all he possessed to Susan Lorton—the interest for her sole use and benefit, the principal to revert to her eldest son after her death, the son to take the name of John. The bank had to make good the money drawn from them by Stephen Price. The boy came in due course, and was christened after the dead man, above whose remains a fair white monument has been erected, in the rustic church-yard near Hawley Wood, at the expense of Robert and Susan Ashley; a handsomer tomb than is usually given to a man of John Granger's class, but it was the only thing Susan could do to show how much she had valued him who had loved her so dearly.

She often sits beside that quiet resting place in the spring twilight, with her children busy making daisy-chains at her knee; but she has never seen John Granger's ghost since that evening in the wood, and she knows that she will never see it again.—*Belgravia Annual*.

Ladies, why spend dollar after dollar for costly Cosmetics, Hair Renewers, Lotions, &c., &c.,

When for only a trifle you can obtain the ingredients from your druggist or storekeeper, and prepare all such articles yourself, besides know what you are using? Near all such articles contain poisonous drugs. To all who write, we will send, in a plain sealed envelope, a correct receipt for making our *Rosette Bloom*, which imparts to the skin the glow of youth and softness of velvet; removes and cures all pimples, pustules, blotches, black heads, and tan spots, leaving the complexion fresh, clear and beautiful. Another receipt for making our *Floral Hair Restorer* (highly perfumed) the finest article in the world for restoring gray or faded hair to its original beauty and color. It cleanses the scalp and removes dandruff, and every impurity; and receipt for preparing our *Fragrant Dentifrice*, for cleansing the teeth and preserving them from decay; also, how to make the hair curl. All four sent for one dollar. Many agents and storekeepers are now coining money making these articles to sell again. Eldorado Receipt Co., Pittsburg, Pa. Box, 1,236. July, '73.

GEORGE PAGE & CO.,

Manufacturers of

Patent, Portable Circular Saw Mills,

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Agricultural Engines

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VOL. IV., No. 3—4.

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ENGLISH FEMALE BITTERS

Which are becoming so deservedly popular throughout the United States.

Suffering Females all over the land are continually inquiring for something that will give relief to their constant sufferings. They want a remedy that will Cure, and will buy it and use it, if convinced that no deception is being practised upon them. These Bitters are prepared specially for the positive cure of all

Chronic Female Complaints,

Whether afflicting the beautiful maiden at the spring-time of life, the middle-aged matron, or the palsied grandmother of three score and ten. As a powerful uterine and general tonic, arousing, restoring and regulating all female organs and secretions, imparting iron to the pale and emaciated, casting off all impurities from the system and strengthening and building up the feeble frame,

IT SURELY HAS NO EQUAL.

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Important to Farmers and Threshermen.

We will send free on application a Descriptive Circular and Prices of our Improved Thresher—a small, compact machine, weighing, with lever power, etc., complete, less than 2,000 pounds, and WARRANTED, with four to six horses, to separate and clean thoroughly from 200 to 300 bushels wheat and a proportionate amount of oats per day, doing its work equal to the best of the large threshers. Prices and freight much less than the large machines.

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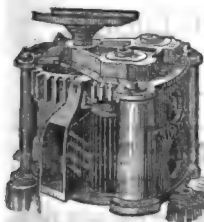
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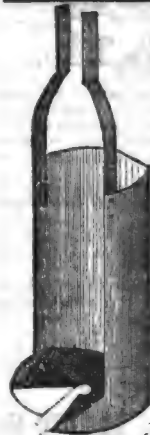
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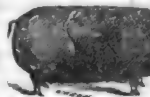
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The Most Concentrated and Durable Article Offered to the Planter.

Put up in good strong barrels of about 250 lbs. each, and in fine, dry condition for immediate use.

Tried and indorsed by the most successful Planters in the Cotton States.

In the manufacture of the above named article, we confine ourselves to pure Bone, Sulphuric Acid, and the best ammoniacal material to be obtained, and are enabled thereby to present to the Planter in a concentrated form a fertilizer which cannot be excelled by pure Peruvian Guano and Dissolved Bones.

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PURE DISSOLVED BONES,

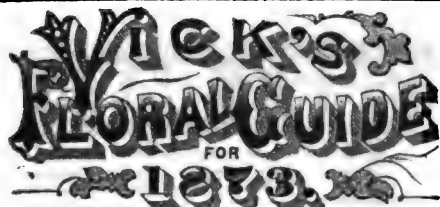
For Composting with Cotton Seed, containing 14 per cent. Soluble Phosphoric Acid,
which can only be obtained by the use of Pure Bone, in Fine,
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For the value of the articles shipped by us, we refer to David Dickson, of Hancock, Dr. Jas. S. Hamilton, of Clarke, Col. B. G. Lockett, of Dougherty, Col. T. J. Smith, of Jefferson, and the prominent planters of the State of Georgia.

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Application for Circulars, or admission, made to the undersigned, at Waverly P. O., Baltimore county, Md.

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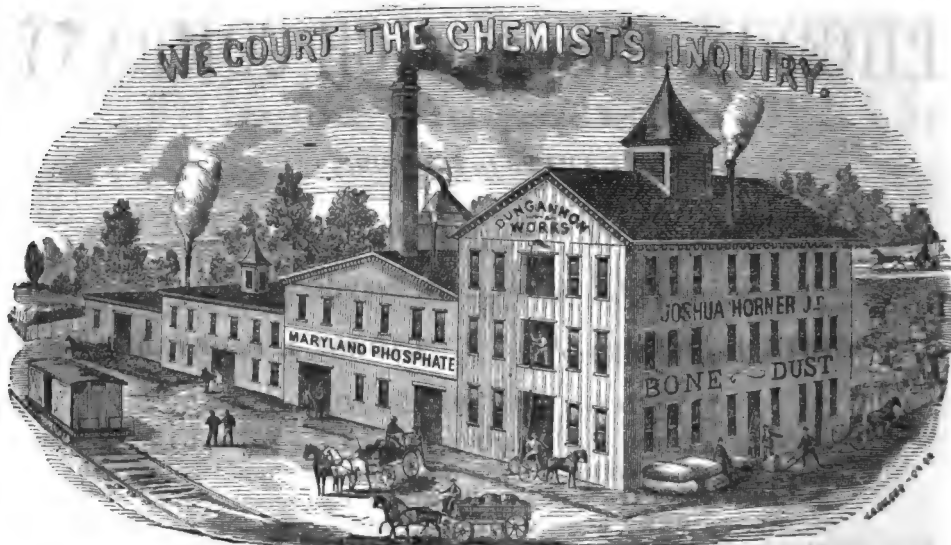
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The "Maryland" is a rejuvenator and permanent improver of the soil. It stimulates equal to Peruvian Guano, and sustains equal to Bone, being composed almost entirely of these ingredients, with a very liberal percentage of Potash in the residuum. There is no adulterator nor inferior article used—every part of the Phosphate being of essential benefit to the land. Neither pains nor expense have been spared in its preparation, and we claim for it the greatest benefit to the farmer from the smallest outlay.

For Cotton, Wheat and Corn, and as a general stimulant and ailment for worn and impoverished land, there can be nothing superior. It is warranted to run as high in Ammonia, and higher in Bone Phosphate, than any other fertilizer in the market.

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Our own manufacture, in new bags; Eastern and Western Bone Dust, \$35. Peruvian Guano delivered from Peruvian Government Warehouse at the lowest rates. No charge for delivery.

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These Sheep can hardly be surpassed in this country for size, constitution, purity of blood, fineness of wool, and freedom from wrinkles and gum. Engagements are sought now in order that he may know how many ram lambs to preserve.

Should a sufficient number of persons send in orders for more or less sheep to make up a car load, he will include

GROWN EWES AT TEN DOLLARS EACH,

AND DELIVER ALL OF THEM IN ATLANTA AT THE PRICES MENTIONED.

This is a favorable opportunity for those who desire to begin wool-growing at the South, as the cost of freight from the North is saved, and the sheep are acclimated. The money is to be paid on the delivery of the sheep.

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300 bags Coffee,
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100 bbls Whisky,
500 bbls Salt,
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300 bxs Candles,
500 kils Mackerel,
25 bbls Sugar,
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Also, Tea, Shot, Lead, Pepper, Spice, Starch, Rope, Tar, Soda, Soap, Matches, Crackers, Candy,

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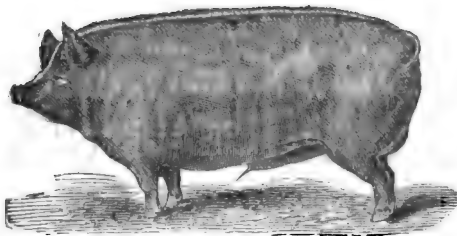
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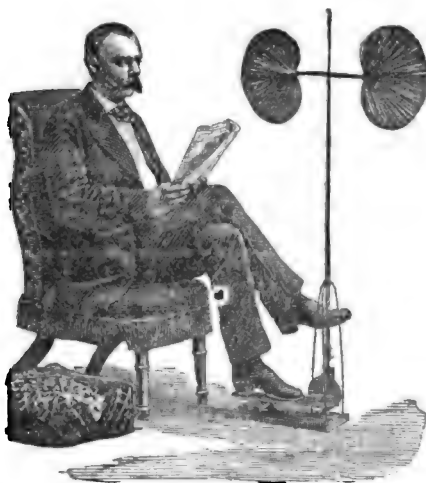
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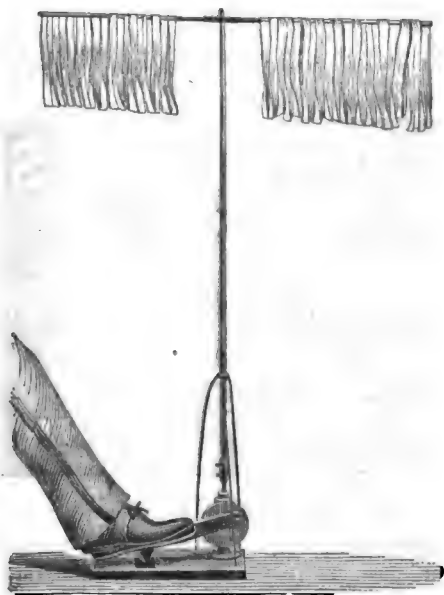
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MOST USEFUL INVENTION FOR THE TIMES.



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It is worked by the foot, and requires but little labor to keep it going, and will secure you against the trouble of flies while at your meals, and may be changed by taking out the fly brush and putting in two palmetto fans, and you can then sit and read, sew or eat, and fan yourself at the same time. The engravings give a good idea of the working of this useful Machine.

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45	HEIFER CALVES, of the Year 1872,	
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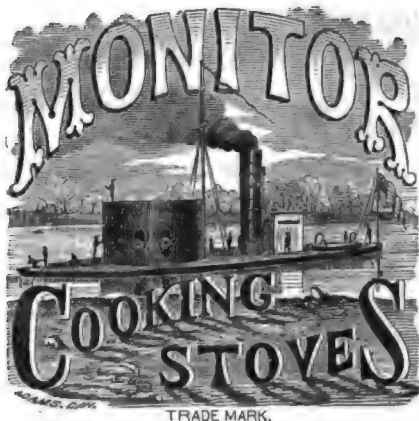
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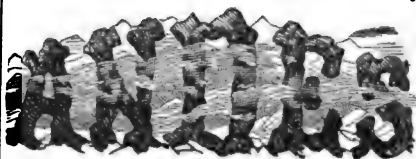
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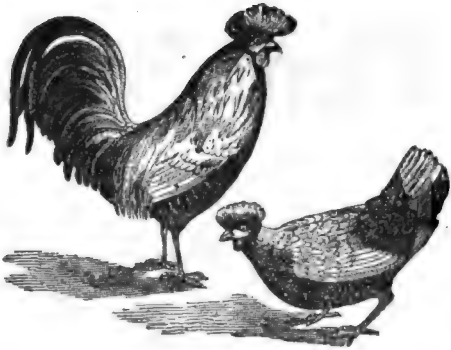
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C. B. CHURCH,	-	-	Memphis, Tenn.
N. S. BRUCE,	-	-	W. S. Bruce & Co.
J. C. FIZER,	-	-	Estes, Fizer & Pinson.
PHILIP TUGGLE,	-	-	Memphis, Tenn.
NAPOLÉON HILL,	-	-	Hill, Fontaine & Co.
F. W. SMITH,	-	-	Cashier Memphis City Fire & Gen'l Ins. Co.
J. W. CLAPP,	-	-	Memphis, Tenn.
JAS. S. WILKINS,	-	-	E. H. Clark & Co.

Policies will be issued for \$1,000 to \$10,000 on the lives of males, from the age of 16 to 60, and for \$5,000 from the age of 67 to 85. On the lives of females, for \$5,000 only, and to the age of 60, for \$2,500 only, from the age of 67 to 85. No extra charge after that age. No extra hazardous risks taken. All policies non-forfeitable after second annual payment.

